

PMC-301L

SERVICE MANUAL

Ver 1.1 2001. 05

AEP Model
UK Model



CD Section	Model Name Using Similar Mechanism	NEW
	Loading Mechanism Name	KSL-2103ABM
Tape Section	CD Mechanism Type	KSM-2101ABM
	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	MF-501-105

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wave length: 780 nm
	Emission duration: Continuous Laser output: Less than 44.6 μ W (This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.)
Spindle speed	200 r/min (rpm) to 500 r/min (rpm) (CLV)
Error correction	Sony Refined Super Strategy Cross Interleave Reed Solomon Code
Number of channels	2
Frequency response	20-20,000 Hz +1/-2 dB
Wow and flutter	Below measurable limit

Radio section

	FM	MW	LW
	87.6-107 MHz	531-1,602 kHz	153-279 kHz
IF	FM: 10.7 MHz MW/LW: 450 kHz		
Aerials	FM: 75 ohm unbalanced MW/LW: External aerial terminals		

9-959-782-12

Sony Corporation

2001E0400-1

Home Audio Company

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Shinagawa Tec Service Manual Production Group

Cassette-corder section

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 120 s (sec.) with Sony cassette HF60
Frequency response	
	TYPE I (normal) 50-15,000 Hz
	TYPE II (CrO ₂) 50-16,000 Hz
	TYPE IV (metal) 50-18,000 Hz

General

Speaker	Fullrange: 10 cm (4 inches) dia., 4 ohms cone type (2)
Inputs	Mixing microphone input jack (minijack): Sensitivity 3.2 mV For low impedance microphone
Outputs	LINE IN jack: Sensitivity 436 mV Headphones jack (stereo minijack): For 16-64 ohms impedance headphones
	OPTICAL DIGITAL OUT (CD) jack: Wavelength 660 \pm 30 nm
Maximum power output	12.5 W + 12.5 W

—Continued on next page—

PERSONAL COMPONENT SYSTEM
SONY®

Power requirements	For CD radio cassette-corder: UK model 240 V AC, 50 Hz AEP model 220-230 V AC, 50 Hz
	For remote commander: 3 V DC, 2 size AA (R6) batteries
Power consumption	AC 55 W
Dimensions	Unit: 180 x 254 x 285 mm (w/h/d) (7 1/8 x 10 x 11 1/4 in.) Speaker: 150 x 254 x 229 mm (w/h/d) (6 x 10 x 9 1/8 in.) (incl. projecting parts and controls)
Mass	Approx. 12 kg (26 lb. 7 oz.)
Supplied accessories	Remote commander RMT-C301 (1) FM aerial (1) MW/LW loop aerial (1)

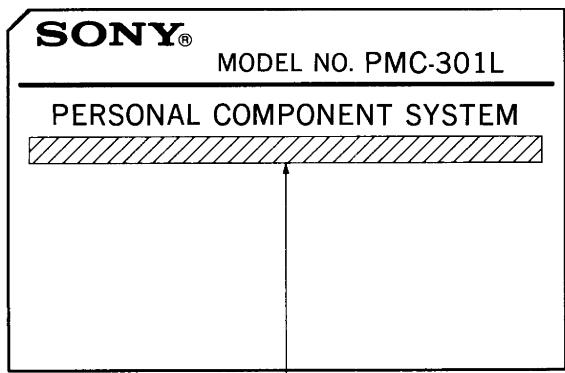
Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MODEL IDENTIFICATION

—Model Number Label—



AEP model: AC: 220-230V~50Hz 55W
UK model : AC: 240V~50Hz 55W

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

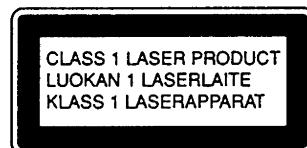
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25cm away from the objective lens.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

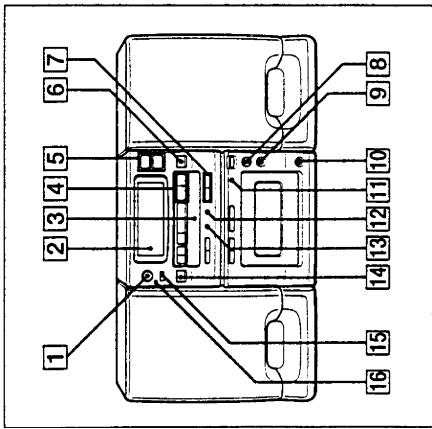
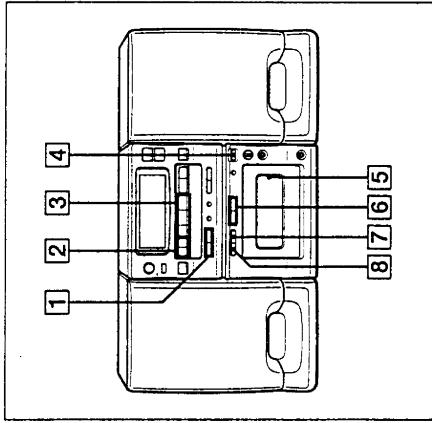
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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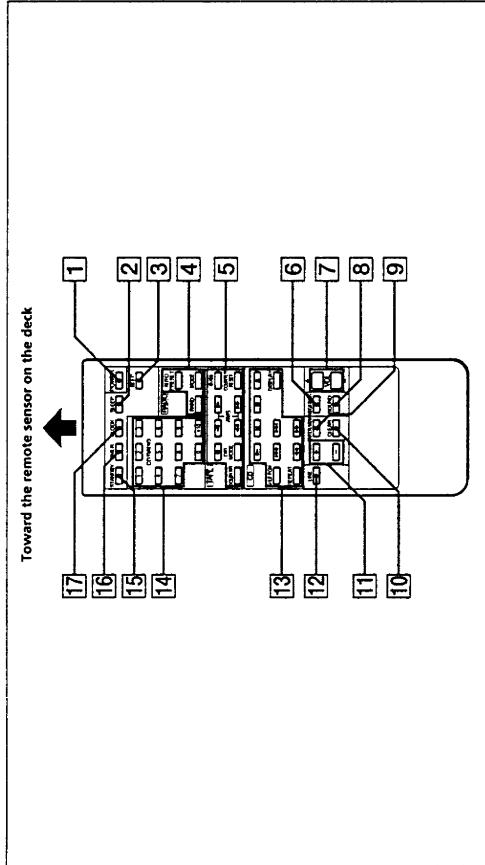
Remote commander

CD Player and General



Radio and Tape player

CD Player and General



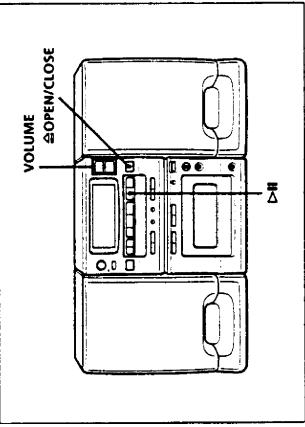
SECTION 1 GENERAL

This section is extracted from instruction manual.

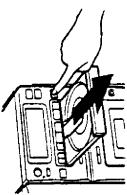
Playing a CD (normal play)

You can operate the player from the deck or with the supplied remote commander. Also, you can play 12 cm (5 inch) and 8 cm (3 inch) CDs without an adaptor.

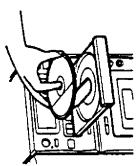
4 Press \triangle (play/pause).
When a CD is playing, the \odot indication rotates. The CD player plays all the tracks once. The track number and playing time appear in the display window. Tracks disappear from the music calendar as they are played.



1 Press \triangle OPEN/CLOSE to open the disc tray. The power is turned on (direct power-on).



2 Holding the CD by the edge, place the CD on the disc tray with the label side up.



Note
When the "no disc" indication appears, insert a CD in the disc tray.

To find a point in a track

Remote

In play mode, press \blacktriangle or \blacktriangleright . Listen for the point you want to hear.

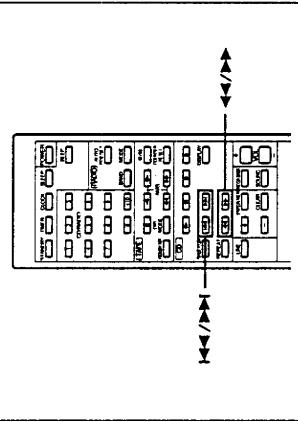
3 Press \triangle OPEN/CLOSE. When a CD is in the disc tray, the \odot indication appears in the display window. The disc track numbers and the total playing time appear in the display window.



If the disc contains more than 16 tracks, the "OVER 16" indication appears in the display window.

Playing Specific Tracks

You can find the beginning of a track or a point in a track while the player is playing or paused. Find a particular track by specifying the track number.



5 Adjust the volume and audio emphasis (See Selecting the Audio Emphasis on page 7-15). (Be careful not to turn up the volume excessively while listening to a portion with very low audio input. If you do, the speakers may be damaged when a peak level plays.)

To find the beginning of a track

Remote

To	Press	Press*	Deck
To find	\blacktriangle	\blacktriangle	AMS/SEARCH \blacktriangle
the beginning of the current track	\blacktriangle	\blacktriangle once	AMS/SEARCH \blacktriangle once
previous tracks	\blacktriangle	repeatedly	AMS/SEARCH \blacktriangle repeatedly
the beginning of the next track	\blacktriangleright	\blacktriangleright once	AMS/SEARCH \blacktriangleright once
the beginning of the succeeding tracks	\blacktriangleright	repeatedly	AMS/SEARCH \blacktriangleright repeatedly

* If one of the following indications is displayed, press the \blacksquare (stop) button to clear the indication: REPEAT 1, REPEAT ALL, REPEAT SHUFFLE, SHUFFLE, PGMM, REPEAT PGMM.

To find a point in a track

Deck

To	Press	Press*	Deck
Stop play	\blacksquare	\blacksquare	AMS/SEARCH \blacktriangle
Resume play after pause	\blacksquare or \blacktriangle	\blacksquare	AMS/SEARCH \blacktriangle
Remove the CD	First \blacksquare then \blacktriangle	First \blacksquare then \blacktriangle	AMS/SEARCH \blacktriangle
Turn off the power	POWER	POWER	AMS/SEARCH \blacktriangle

In pause mode, press \blacktriangle or \blacktriangleright . Listen for the point you want to hear.

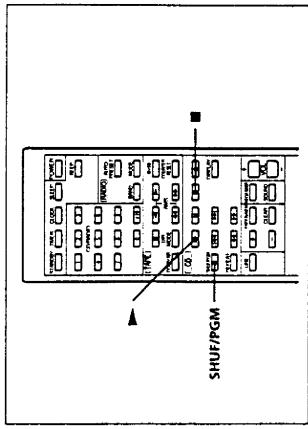
In play mode, keep pressing \blacktriangle or \blacktriangleright . Listen for the point you want to hear.

In pause mode, press \blacktriangle or \blacktriangleright . Observe the display.

Playing Tracks in Random Order (shuffle play)

Playing Tracks in the Desired Order (programme play)

In shuffle play tracks play in mixed order. For example, instead of playing tracks 1, 2, 3 in order, they will play in any order such as 2, 1, 3.



1 Press ■ (stop) on the CD section to display "CD".

2 Press SHUFFLE/PGM until the "SHUFFLE" indication appears in the display window.



3 Press ▶ (play).
The tracks play in random order. When a track finishes, its track number disappears from the music calendar. When the all tracks have played once, the player is in the stop mode.

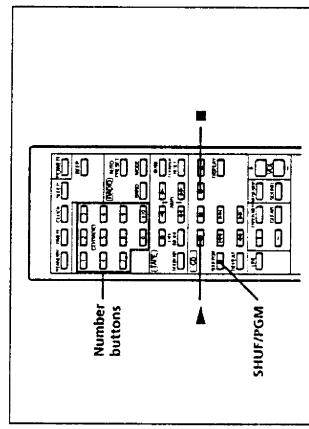


To
Stop play
Cancelled shuffle play

Press
■ on the CD section
SHUFFLE/PGM until no indication appears in the display

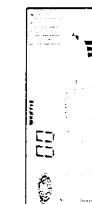
Notes
• You cannot display the remaining time on the CD during shuffle play.
• When you display "SHUFFLE" during normal play, shuffle play begins from the selection being played.

You can programme up to 20 tracks to play in any order you choose.

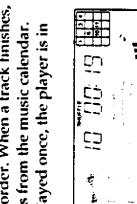


1 Press ■ (stop) on the CD section to display "CD".

2 Press SHUFFLE/PGM until the "PGM" indication appears in the display window.



3 Press the number buttons for the tracks you want played in the order you want them played (e.g., 5, 1, 9). Up to 20 tracks can be programmed.



To
To change the order of the tracks
To erase the current programme
If you make a mistake

Press
Stop play
Cancelled programme play
■ on the CD section
SHUFFLE/PGM until no indication appears in the display

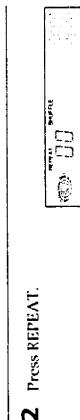
Notes
• You cannot display the remaining time on the CD during shuffle play.
• When you display "SHUFFLE" during normal play, shuffle play begins from the selection being played.

Playing Tracks Repeatedly

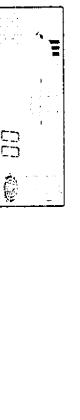
You can play tracks repeatedly in normal, shuffle or programme play modes. In shuffle play, the tracks play in a different order each time. Repeat only one track or all the tracks.

Repeating tracks in random order

- 1 Press SHUF/PGM until the "SHUFFLE" indication appears in the display window.



- 2 Press REPEAT.



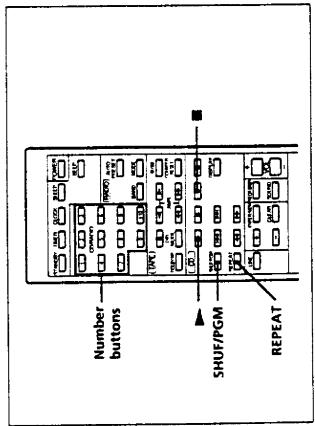
- 3 Press ▶ (play).

Repeating programmed tracks

- 1 Press SHUF/PGM until the "PCM" indication appears in the display window.



- 2 Press the number buttons on the remote commander for the tracks you want played in the order you want them played.



Repeating a single track

- 1 Press REPEAT until "REPEAT 1" appears in the display window.



- 2 Press the number of the track you would like repeated.



- 3 Press REPEAT.



- 4 Press ▶ (play).

The same programme plays repeatedly.

Repeating all the tracks

- 1 Press REPEAT until "REPEAT ALL" appears in the display window.



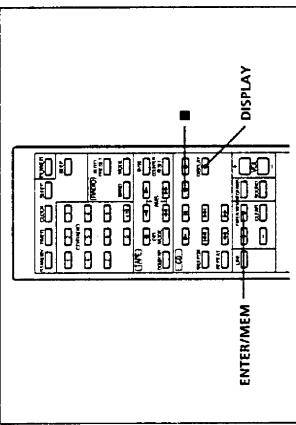
- 2 Press ▶ (play).

The player begins playing at the first track. When all the tracks have played once, the player starts playing from the first track again.

Checking and Changing Time and Track Order

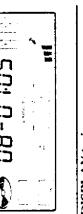
Checking the order of programmed tracks

Before playing the CD, press ENTER/MEM on the remote commander. With each press, the selections appear in the programmed order. If you press ENTER/MEM again at the last selection, you can continue to programme tracks after the last order.



Checking the remaining time

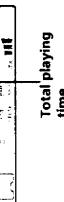
- To display Remaining time on the CD
DISPLAY once



- Press DISPLAY once



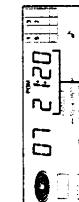
- Press DISPLAY twice



Total playing time

Checking the total playing time of the programmed tracks

Before playing the CD, press DISPLAY on the remote commander. The total playing time appears.



Total playing time

- If the disc has more than 16 tracks, the "OVER 16" indication appears in the display window. And if the disc has 21 tracks or more, the remaining time appears as "— — —".

Notes

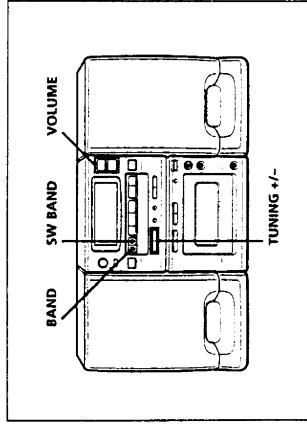
- While playing tracks repeatedly, the remaining time of the CD cannot be displayed.
- You can also repeat tracks while playing a CD.

Listening to the Radio

Presetting Radio Stations Automatically

Presetting Radio Stations Manually

Whenever you want to listen to the radio, press the BAND button. To quickly find and play your favourite radio stations, store them using the station auto- or manual-preset function described in the next three sections.



1 Press BAND until the band you want appears. The power is turned on (direct power-on).

(PMC-3015 only) To tune in an SW band:

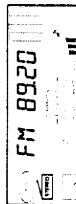
First press BAND to display "SW", then SW BAND to display the sub-band you want. The band meter appears (followed by the frequency (see Specifications)).

2 Tune in a radio station either automatically or manually.

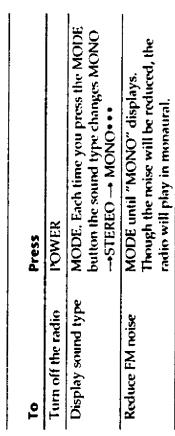
To tune automatically: Keep pressing TUNING +/- Release it when the frequency digits begin to change rapidly in the display. The player automatically scans the radio frequencies and stops when it finds a clear station.

To tune manually: Press TUNING +/- once at a time to tune in a station.

If the radio tunes to an FM stereo broadcast, the "STEREO" indication appears.



3 Press VOLUME to adjust the volume and select the audio emphasis (see *Selecting the Audio Emphasis* on page 4-E).



Reduce FM noise

MODE until "MONO" displays.

Though the noise will be reduced, the radio will play in monaural.

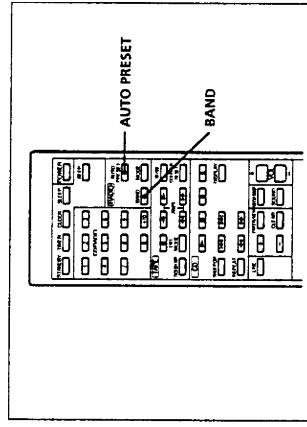
To improve broadcast reception
FM: Connect an optional FM aerial (see page 4-E).
SW/MW/LW: Connect the supplied SW/MW/LW loop aerial or connect an optional insulated wire (see page 5-E).

(PMC-3015* only) Changing the MW tuning interval

The MW tuning interval is preset to 9 kHz at the factory. If you need to change the interval:

1 Turn off the power and disconnect the mains lead.
2 Wait until the time indications disappear from the display (approximately 2.5 hours).
3 Change the position of the MW TUNING INTERVAL selector (at the rear of the player). After changing the MW tuning interval, reset the current time, preset radio stations and timer settings, *excluding models for Germany and Italy.

You can preset radio frequencies with good reception automatically by pressing the AUTO PRESSET button. You can preset up to 36 radio stations, 12 for each band and tune in your favourite stations at a touch of a button.



1 Press BAND until the band you want appears.

2 Depress and hold AUTO PRESSET for about 2 seconds. The "AUTO" indication appears for about 2 seconds and the "PRESSET" indication blinks. Low to high frequency stations with good reception will be automatically preset in numerical sequence from the number 1.



To add stations that cannot be preset automatically because their signal strength is too weak, follow steps 1 - 5 in *Presetting Radio Stations Manually* on this page.

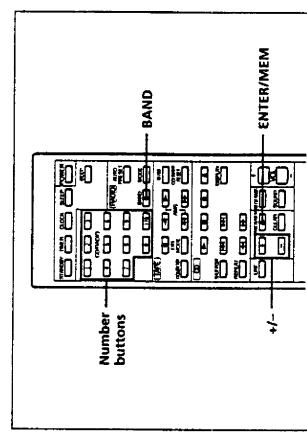
If you make a mistake
Press CLEAR.
The last presetting is erased. Proceed from step 1.

5 Press ENTER/MEM. Your favourite station is stored in memory.



FM 89.20 has been stored on preset number 6.

You can store radio frequencies in the player's memory to tune in your favourite stations at a touch of a button. You can preset up to 36 radio stations in any order, 12 for each band.



1 Press BAND until the band you want appears.

2 Depress and hold ENTER/MEM for about 2 seconds or more.



3 Tune in your favourite station by pressing +/-.

4 Decide on a preset number for the station with the number buttons.

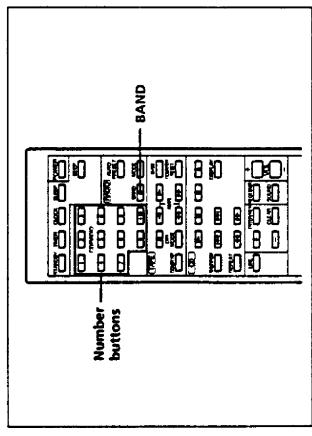
If you make a mistake
Press CLEAR.
The last presetting is erased. Proceed from step 1.



FM 89.20 has been stored on preset number 6.

Playing Preset Radio Stations

Once you have preset the stations, use the number buttons to tune in your favorite stations.



1 Press BAND until the band you want appears.

2 Select the desired preset number with the number buttons. For numbers greater than 9 press +10 and another number.

Selecting on the deck

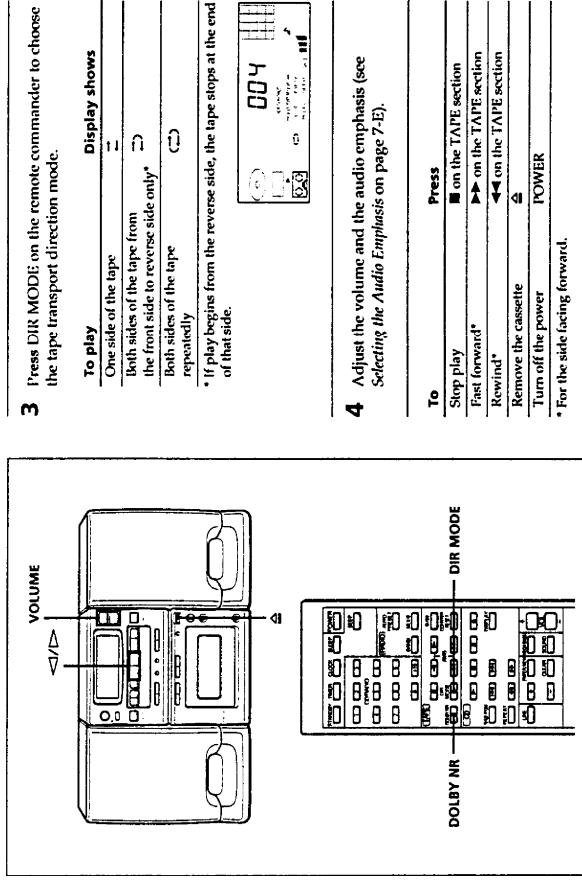
Press BAND to select the band. Then, press PRESET<→>D4 to select the desired preset number.

To erase a preset station

Storing a new station on a previously used preset number will erase the old station and replace it with the new one.

Playing a Tape

Once you have preset the stations, use the number buttons to tune in your favorite stations.



3 Press DIR MODE on the remote commander to choose the tape transport direction mode.

To play	Display shows
One side of the tape	—
Both sides of the tape (from the front side to reverse side only)*	→
Both sides of the tape repeatedly	←
* If play begins from the reverse side, the tape stops at the end of that side.	

4 Adjust the volume and the audio emphasis (see Selecting the Audio Emphasis on page 7-E).

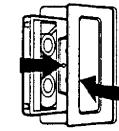
To	Press
Stop play	■ on the TAPE section
Fast forward*	▶ on the TAPE section
Rewind*	◀ on the TAPE section
Remove the cassette	▲
Turn off the power	POWER
* For the side facing forward.	

Note While winding, the ← or → indication appears in the display window.

To listen to a tape recorded with the Dolby®*

DOLBY NR	Press DOLBY NR on the remote commander until the "DOLBY B NR" indication appears in the display window.
DIR MODE	Dolby noise reduction system reduces tape hiss noise in low-level high-frequency signals.
POWER	When you listen to a tape that wasn't recorded with DOLBY B NR, press DOLBY NR until the "DOLBY B NR" indication disappears.
	* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
	"DOLBY" and double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

- 1 Press □ (eject) to open the tape compartment. Insert a recorded tape.
- 2 Press ▷ (to play the front side) or ← (to play the reverse side) to turn the power on (direct power-on) and start playing.



Continued on next page

Finding the beginning of a song (AMS)

Playing a Tape (continued)

To use the tape counter

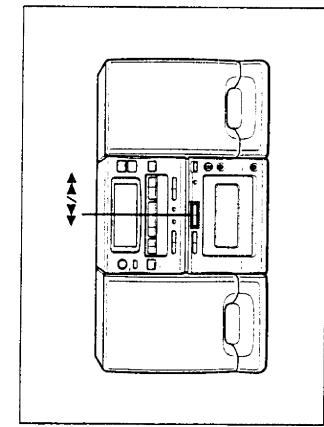
- The display shows the tape counter while playing or recording a tape.
- The number of the tape counter moves conversely while playing or recording the reverse side.
- It is recommended that before recording, write down the number of the tape counter or reset the tape counter with the COUNTER RESET button.

The tape is identified automatically (ATIS* system)

When a cassette is inserted into the cassette compartment, the player automatically identifies the type of tape via the ATIS system which reads "the corresponding holes in the cassette.

AMS: Automatic Tape Selector

Tape type	Playback	Recording
TYPE I (normal)	Can be used	Can be used
TYPE II (CrO ₂)	Can be used	Can be used
TYPE IV (metal)	Can be used	Can be used



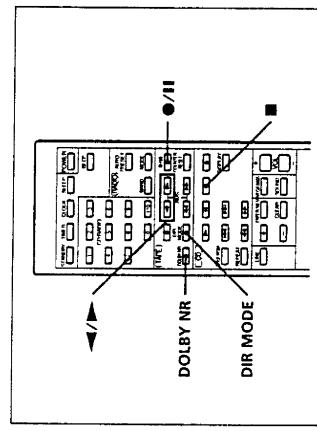
To find the beginning of the current track
Front side **Reverse side**
 While playing a tape, press **◀** or **▶**.

Notes

- If a soft sound like pianissimo continues for some seconds in a track, the AMS function may operate and start to play as the next track.
- If you press the **◀** or **▶** button when there is no sound in the track, the AMS function does not operate correctly.

Recording a CD Manually

Using the AMS (Automatic Music Sensor) function you can quickly find the song you're looking for. The player senses where a track begins by detecting the pauses between the tracks.



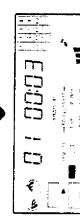
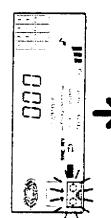
To record the beginning of the next track
Front side **Reverse side**
 While playing a tape, press **◀** or **▶**.

Notes

- If a soft sound like pianissimo continues for some seconds in a track, the AMS function may operate and start to play as the next track.
- If you press the **◀** or **▶** button when there is no sound in the track, the AMS function does not operate correctly.

You can record a CD as you like, for instance, by recording just the songs you want or record from the middle of the tape.

- While keep pressing **●/II** (record/pause), press **◀** or **▶**. Recording starts after 8 seconds.



Note
 Do not press any buttons that change the function (for example, the **■** (stop) button on the TAPE section) while recording. If the function changes from CD to any other function, recording will stop.

- The recording level is adjusted automatically**
 Adjusting the volume or the audio emphasis will not affect the recording level.

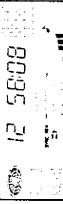
To **Press**
 - Stop recording **■** on the CD section
 - Pause during record **●/II**

When the CD finishes while recording
 The tape stops automatically (CD synchronized stop).

To start recording on the deck
Front side **Reverse side**
 Press **◀/▶** within 8 seconds after pressing **●/II**.

To record from the desired track
 Select the desired track with the **◀/▶** button and start recording.

To record in PGM (programme) mode
 1. Press **■** (stop) on the CD section.
 2. Select PGM play (See Playing Tracks in the Desired Order (programme play) on page 11-E.
 3. Press **◀/▶** or **▷** within 8 seconds after pressing **●/II** (record/pause).



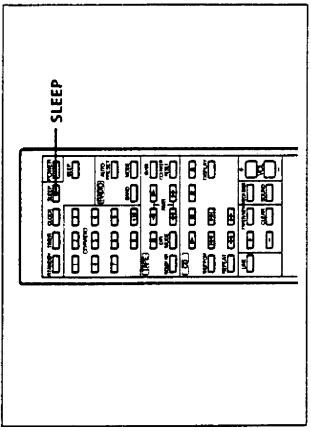
5 When you want to record using the Dolby Noise Reduction system, press DOLBY NR. The 'DOLBY NR' indication appears in the display window.

Falling Asleep to Music

You can set the player to turn off automatically, so you can go to sleep to music.

Falling asleep and waking up to different music

- 1 Set the wake up timer by following steps 1 - 6 in *Falling Asleep to Music* on this page.
- 2 Activate the sleep function by following steps 1 - 2 in *Waking Up to Music* on the next page.



- 1 Play the desired music source and adjust the volume.

Press	To play	Do this
► (to play the front side) or ▶ (to play the reverse side)	a Tape	Insert a tape
BAND and tune in a station	the Radio	Turn in a station
► on the CD section	a CD	Place a CD on the disc tray
LINE	Other music source	Turn on the equipment connected to LINE IN (for details, see the instruction manual supplied to the equipment)

- 2 Press SLEEP. The "SLEEP" indication appears in the display window.



As the sleep timer starts, the display back light goes out. The player plays for 60 minutes, then shuts off automatically.

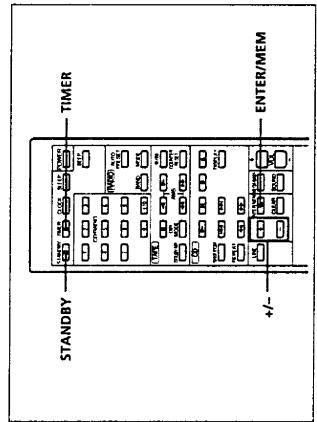
To cancel the sleep function
Press POWER.

About the volume of the sleep timer
Your personal component system has the fade out function. When the player shuts off, the setting volume fades out gradually.

Waking Up to Music

You can wake up to music at a preset time. Make sure the current time is correct. If it is not, reset it referring to the section *Setting the Clock* on page 6-1. Make sure the Θ (clock) indication is not lit in the display window.

- 1 Set the wake up timer by following steps 1 - 6 in *Falling Asleep to Music* on this page.
- 2 Activate the sleep function by following steps 1 - 2 in *Waking Up to Music* on the next page.



- 1 Prepare the desired sound source.

Do this	To play
Turn on the tape	a Tape
Turn in a station	the Radio
Place a CD on the disc tray	a CD
Turn on the equipment connected to LINE IN (for details, see the instruction manual supplied to the equipment)	Other music source

- 2 Set the volume by pressing +/-, then ENTER/MEM.

Do this	To play
Turn on the tape	a Tape
Turn in a station	the Radio
Place a CD on the disc tray	a CD
Turn on the equipment connected to LINE IN (for details, see the instruction manual supplied to the equipment)	Other music source



- 3 Select the music source ("CD", "RADIO", "TAPE", or "LINE") by pressing +/-, then ENTER/MEM.

Continued on next page

Timer-Recording Radio Programmes

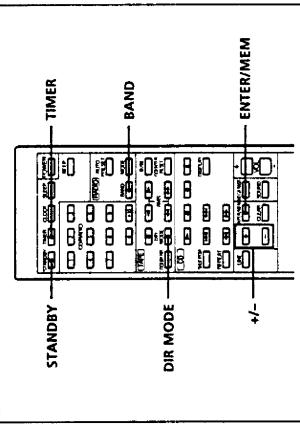
Waking Up to Music (continued)

To cancel the timer
Press STANDBY to make the \odot (clock) indication disappear from the display window.

To have the player go on the next day at the same time
You need not set the timer again. The preset time and the sound source you chose are stored in memory until you reset them. If the \odot (clock) indication is not lit in the display window, press STANDBY to reactivate the timer.

To change the preset time
Press TIMER, then ENTER/MEM to display what you want to change. Re-enter the setting and press TIMER.

About the volume of the sound
Your component system has the fade in function. The sound starts to play with lower volume than the setting and gradually will become the set volume.



You can set the timer to record the radio at a certain time. Make sure the current time is correct. If it is not, reset it referring to the section Setting the Clock on page 6-2. Make sure the \odot (clock) indication is not lit in the display window.

- 1 Tune in the radio station you want to record.
- 2 Insert a blank tape with the side you want to record facing forward.
- 3 Select dual or single-sided recording by pressing DIR MODE.

To record

- 1 One side of the tape
- 2 Both sides of the tape from the front side to reverse side only

Display shows

- 1 At the preset turn-on time the power will go on automatically and recording will start. "ON" and "Off" will appear in the display window. The power will go off again at the preset turn-off time. "ON" and "Off" will disappear from the display window. The display back light does not function even if the power is on.

- 4 Press TIMER, the \odot (clock) and "T6" (playback) or "REC" (record) indications blink. Select "REC" by pressing +/-, then ENTER/MEM.
- 5 Press +/- until "RADIO" appears, then ENTER/MEM.



- 6 Set the timer.
 - 1 Set the timer to the hour you want the music to go on by pressing +/-, then ENTER/MEM. Set the minutes, then press ENTER/MEM.

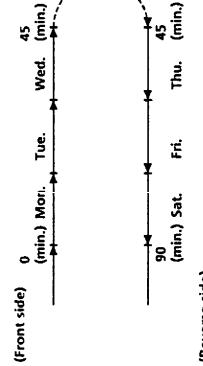
To check when recording will start
Press TIMER, then ENTER/MEM. Each time you press ENTER/MEM, a stored setting (including the volume) lights up. When you finish checking, press TIMER again. The display which was lit before you pressed TIMER will reappear.

To cancel the timer
Press STANDBY to make the \odot (clock) indication disappear.

To have the player go on the next day at the same time

You need not set the timer again. The reset time and the sound source you chose are stored in memory until you reset them. If the \odot (clock) indication does not appear in the display window, press STANDBY to reactivate the timer. If the tape transport direction is \Rightarrow , you can record both sides from the front side to reverse side everyday. When the reverse side of the tape is finished recording, timer-recording cannot continue.

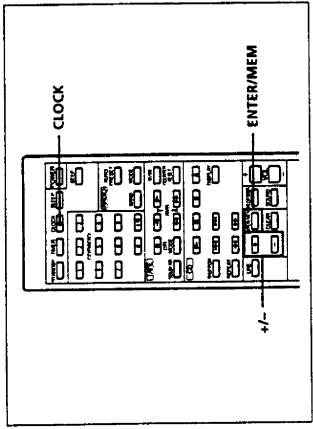
Example: Recording a 15 minute-programme every 6 days.
(Using a 90 minute-tape)



When the tape side recorded is \Rightarrow (reverse side)
Timer-recording starts from the reverse side of the tape. When you record from the front side of the tape, press STANDBY to make the \odot (clock) indication disappear, then press STANDBY again.

Setting the Clock

To use the timer, you need to set the clock. Connect the player to the mains.
(See *Connecting the Power* on page 5-E).
The "—:—:" indication appears until you set the clock.



To check the time while playing a CD or the radio
Press CLOCK. The current time appears.
To return to the previous display, press CLOCK again.

Time display system
PMC-301S (models for Germany and Italy) and TMC-301L:
24-hour system
TMC-301S (excluding models for Germany and Italy):
12-hour system

1 Depress and hold CLOCK until the hour digit blinks.
(PMC-301S' only) The "AM" or "PM" indication also blinks.
*excluding models for Germany and Italy



2 Set the current hour by pressing +/− until the correct hour is displayed. Then press ENTER/MEM.
The minute digits flash.
Set the minute by pressing +/− until the correct minute is displayed.



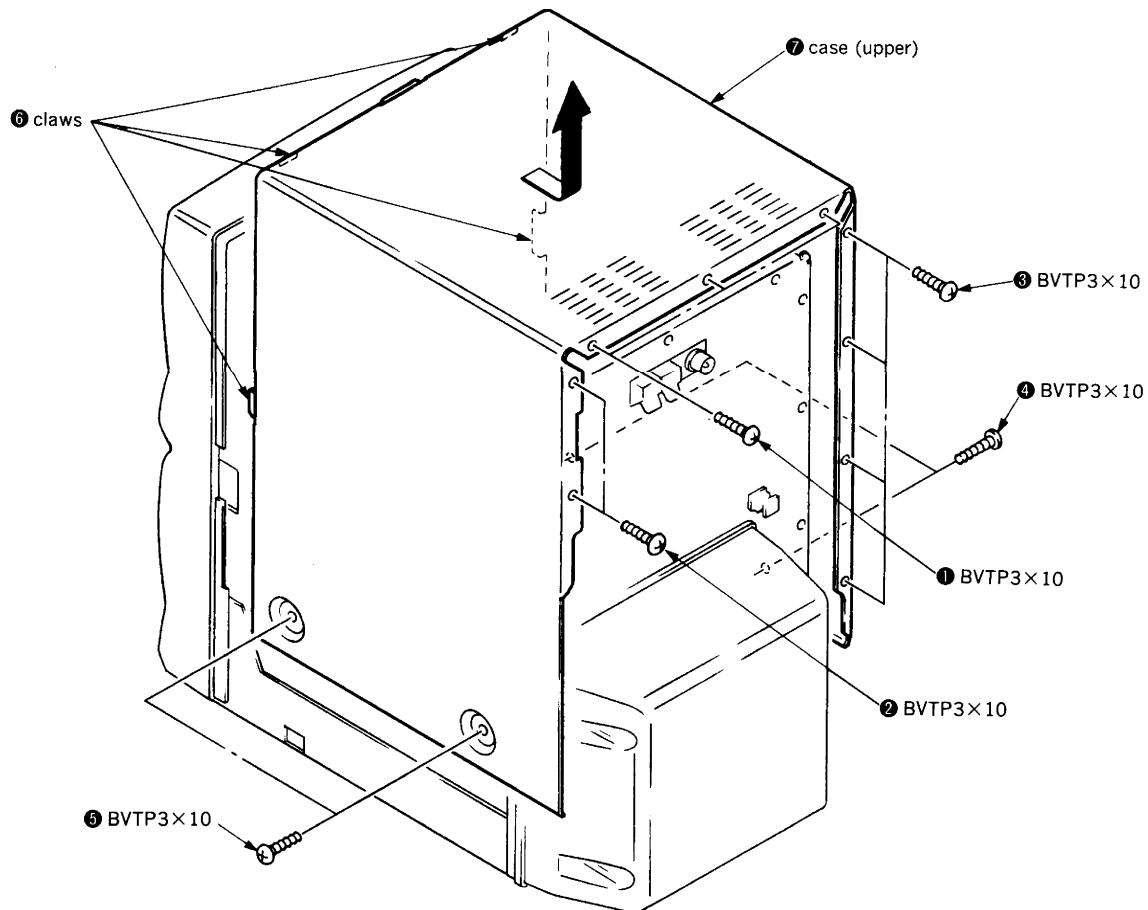
3 Press CLOCK again.
The clock starts from 00 seconds.



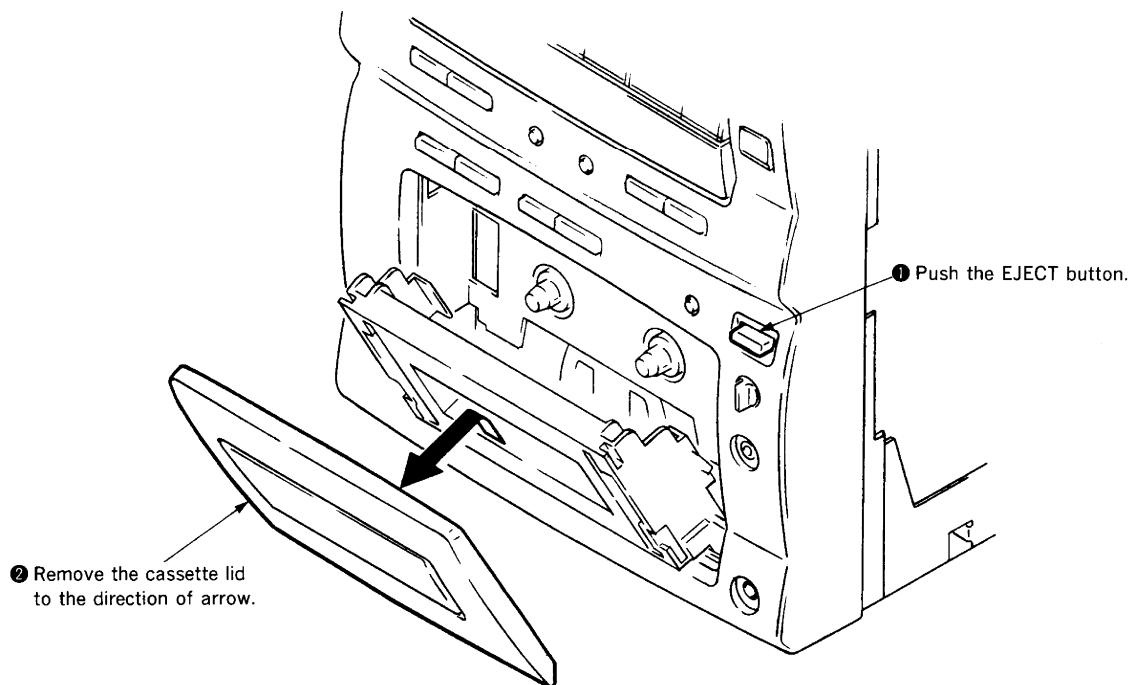
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

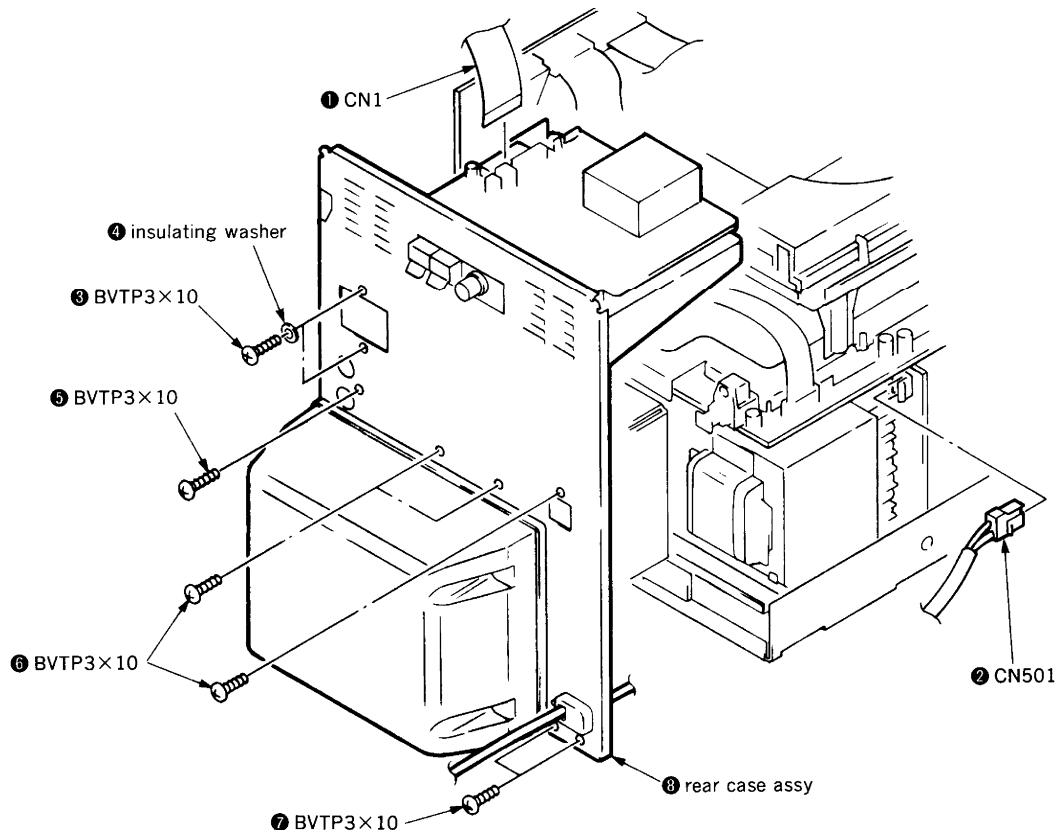
2-1. CASE (UPPER)



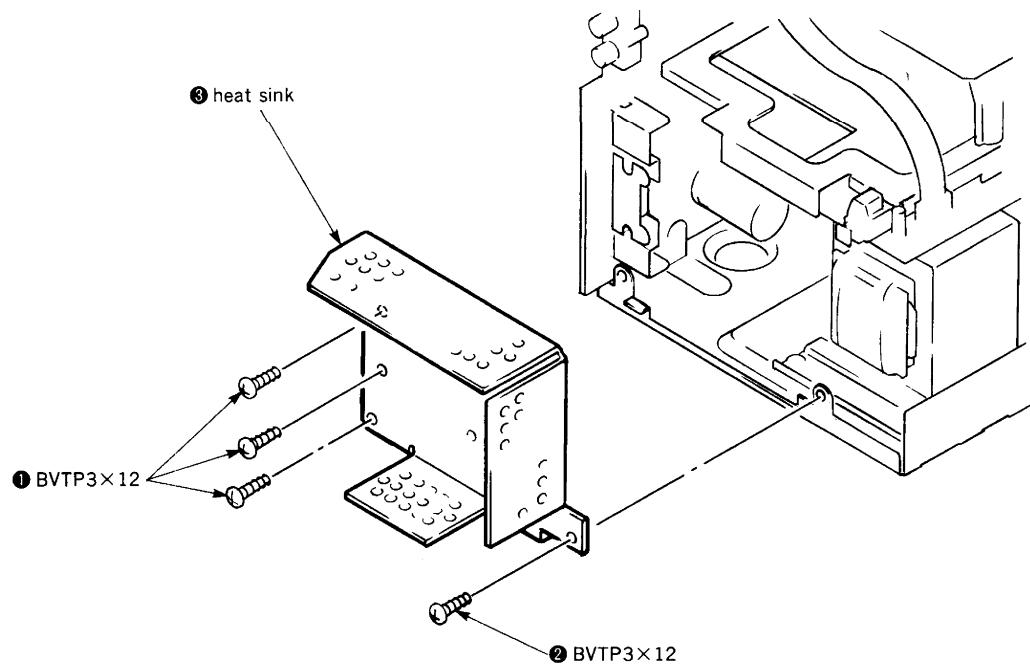
2-2. CASSETTE LID



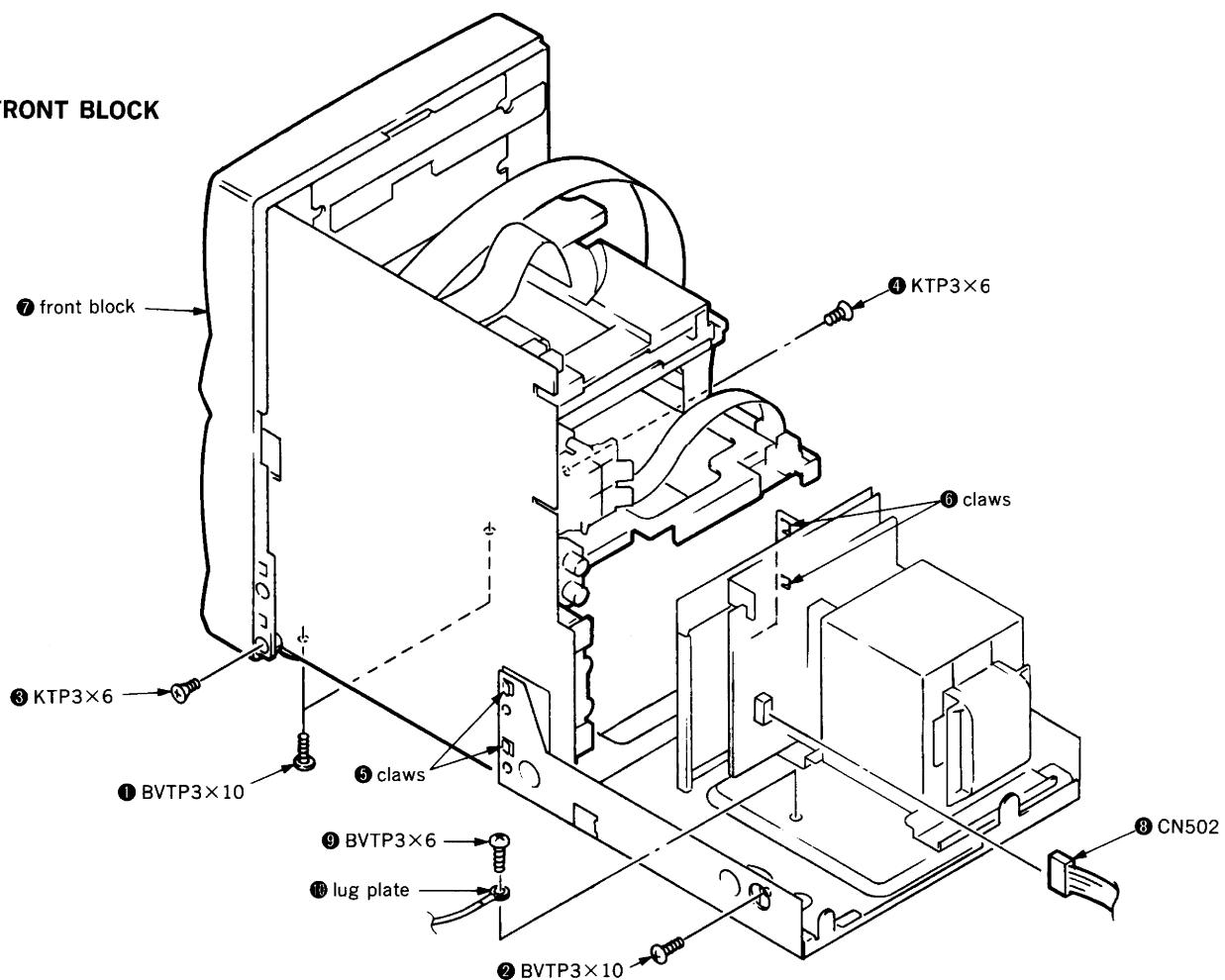
2-3. REAR CASE ASSY



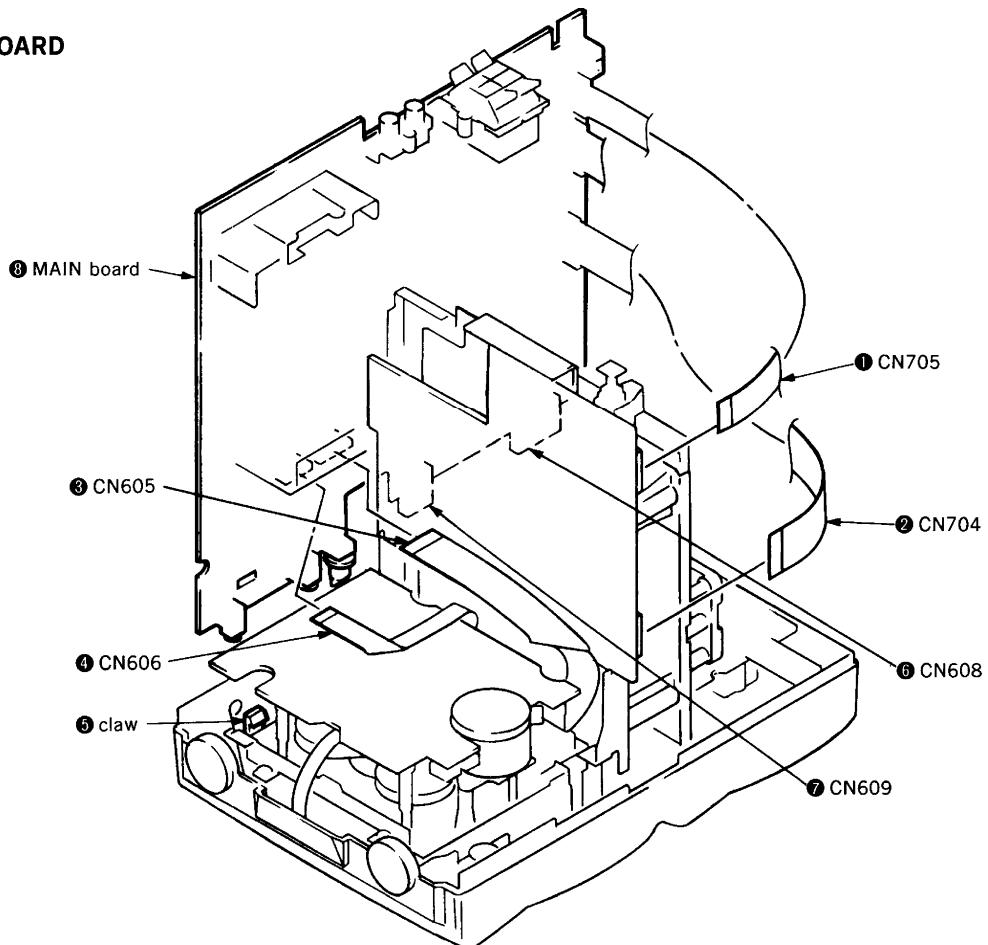
2-4. HEAT SINK



2-5. FRONT BLOCK

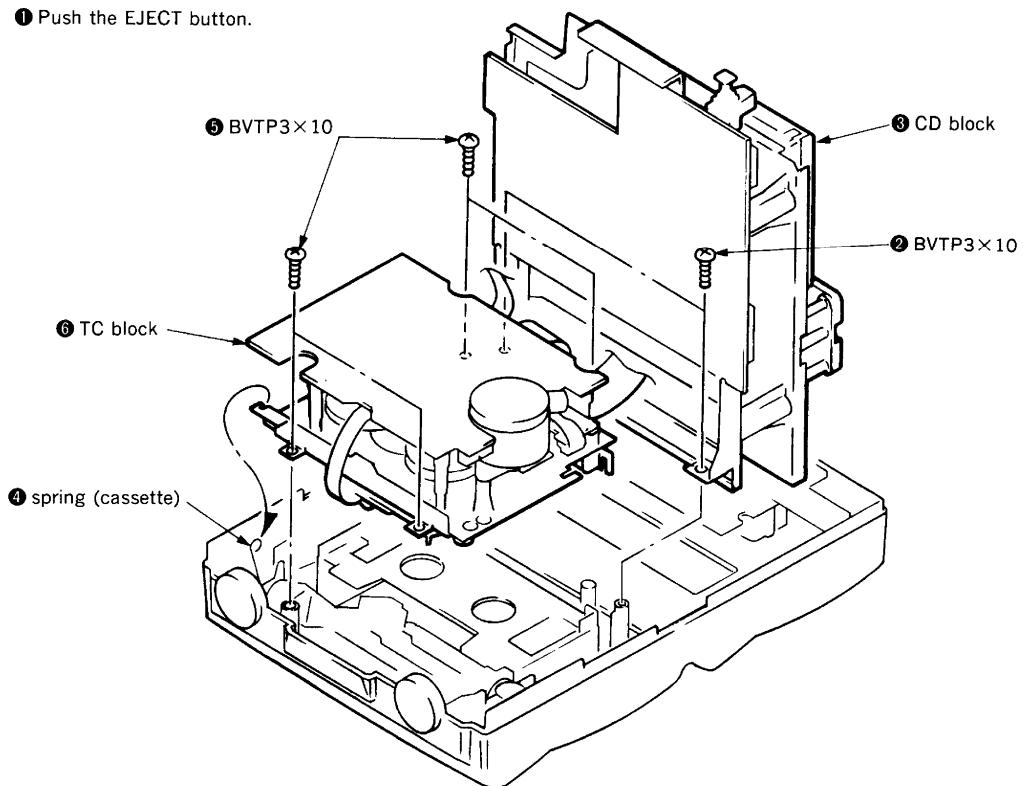


2-6. MAIN BOARD

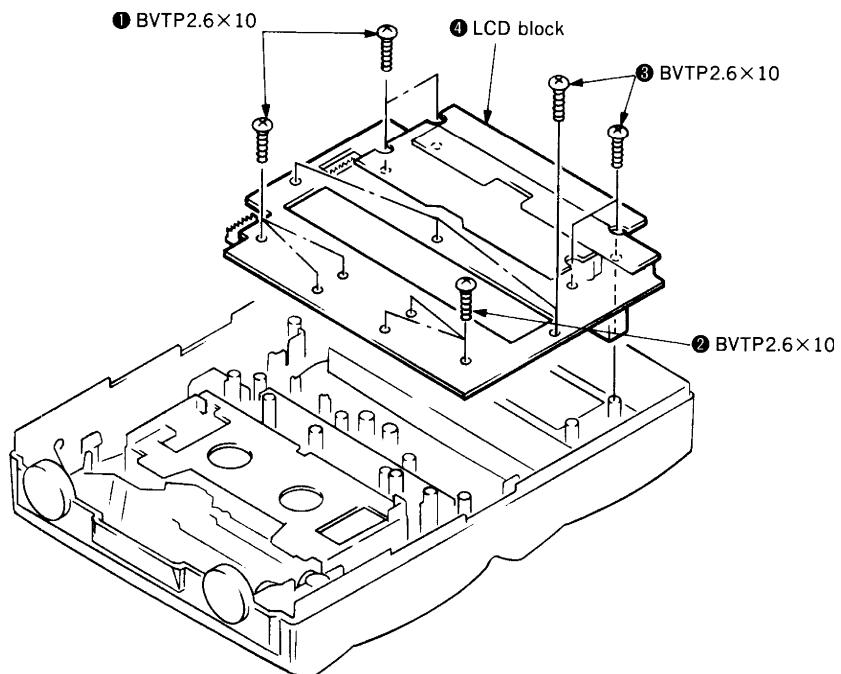


2-7. CD BLOCK, TC BLOCK

① Push the EJECT button.



2-8. LCD BLOCK



SECTION 3

MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback/erase head	pinch rollers
idle	rubber belts
capstan	
2. Demagnetize the record/playback/erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed in the order given in this service manual.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	22.5-50g·cm (0.31-0.69oz·inch)
Forward back tension	CQ-102C	1.5-5g·cm (0.021-0.069oz·inch)
Reverse	CQ-102RC	22.5-50g·cm (0.31-0.69oz·inch)
Reverse back tension	CQ-102RC	1.5-5g·cm (0.021-0.069oz·inch)
Fast Forward	CQ-201B	※ 140-180g·cm (1.94-2.50oz·inch)

※ Before the fast forward torque measurement, the record/playback/erase head is turn to forward mode.

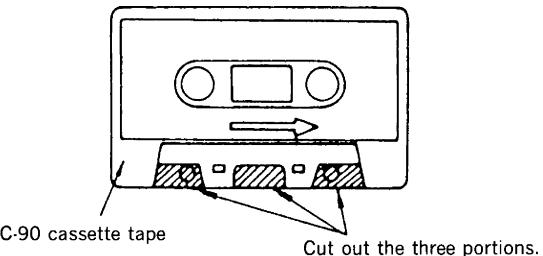
Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 100g (more than 3.53 oz)
Reverse	CQ-403R	

Head Height Adjustment

Procedure :

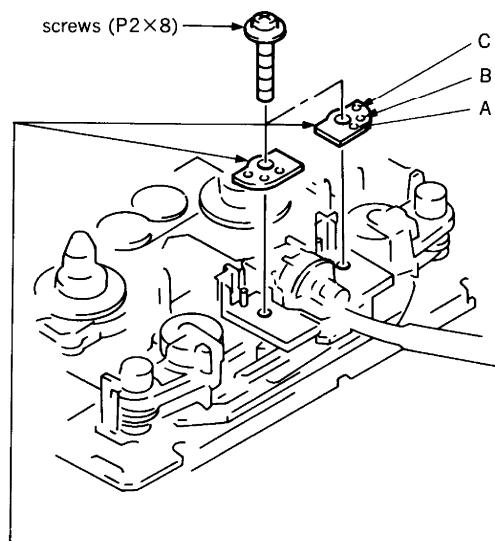
1. If one does not have a mirror cassette CQ-009C (8-909-708-01), cut out the three portions of a 90-minute cassette tape shell as indicated below and use that cassette tape.



2. Set to the FWD playback mode. Loosen the FWD tape guide fixing screw and adjust with inserting the head height adjustment shim to eliminate tape curl and tape twist in the portions of tape guide and head.
3. Set to the REV playback mode. Loosen the REV tape guide fixing screw and adjust with inserting the head height adjustment shim to eliminate tape curl and tape twist in the portions of tape guide and head.
4. After the adjustments, apply suitable locking compound to the screws (P2×8).

Note) Make the assembly do not touch the NR slider for head height adjustment shims.

Adjustment Location :



Head height adjustment shims

Part No.	t	Holes
3-384-356-01	0.30±0.02	without
3-384-356-11	0.35±0.02	A
3-384-356-21	0.40±0.02	B
3-384-356-31	0.45±0.02	C
3-384-356-41	0.50±0.02	without

SECTION 4 ELECTRICAL ADJUSTMENTS

4-1. DECK SECTION 0dB=0.775V

PRECAUTION

1. The adjustments should be performed in the order given in this service manual. As a rule, adjustments about playback should be performed before those about recording.
2. The adjustments should be performed before for both L-CH and R-CH.
3. Function modeTAPE

Standard Input Level

Input terminal	MIX MIC	LINE IN
Signal source impedance	600Ω	600Ω
Input signal level	2.5mV (-50dB)	0.44V (-5dB)
Frequency	1kHz	1kHz

Standard Output Level

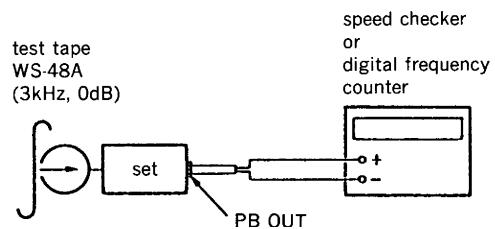
Output terminal	SP OUT (L, R)	H. P OUT	DOLBY OUT
Load impedance	4Ω	32Ω	no load
Output signal level	0.775V (0dB)	0.25V (-10dB)	0.28V (-8.8dB)

Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment
P-4-L300	315Hz, 0dB	playback level, record/playback/erase head azimuth and phase adjustments
P-4-A063	6.3kHz, -10dB	record/playback/erase head azimuth and phase adjustments
CS-123	—	record bias, record level adjustments

Tape Speed Adjustment

Procedure :



1. Set to the FWD playback mode.
2. Adjust RV303 so that the reading on the digital frequency counter is within the adjustment value below.

Adjustment Value : normal speed

Speed checker	Digital frequency counter
-0.67 to +0.67%	2,980 to 3,020Hz

Frequency difference between REV side should be within $\pm 1\%$ (30Hz).

3. Short the High/Normal speed select point and set to the High speed playback mode.
4. Adjust RV304 so that the reading on the digital frequency counter is within the adjustment value below.

Adjustment Value : high speed

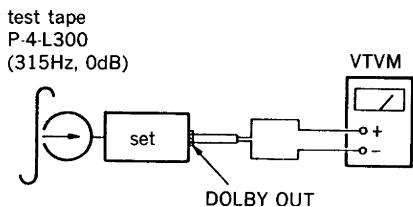
Speed checker	Digital frequency counter
-0.67 to +0.67%	5,960 to 6,040Hz

Frequency difference between REV side should be within $\pm 1\%$ (60Hz).

Adjustment Location : See page 22.

Playback Level Adjustment

Procedure :



1. Set to the FWD playback mode and adjust RV101 (L-CH) and RV201 (R-CH) so that the reading on the VTVM is within the adjustment value below.

Adjustment Value :

DOLBY OUT level: 0.17 to 0.19V (-12.2 to -13.2dB)
Level difference between channels: within 0.3dB

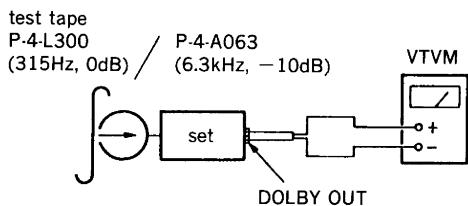
Confirm that the DOLBY OUT level does not change even if playback or stop operation is repeated several time.

2. Set to the REV playback mode and confirm that the DOLBY OUT level difference between FWD playback mode is within 0.5dB.

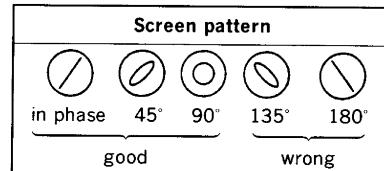
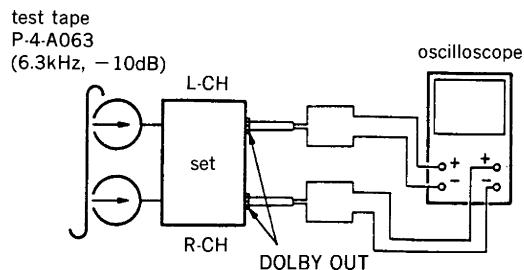
Adjustment Location : See page 22.

Record/Playback/Erase Head Azimuth and Phase Adjustments

Procedure :

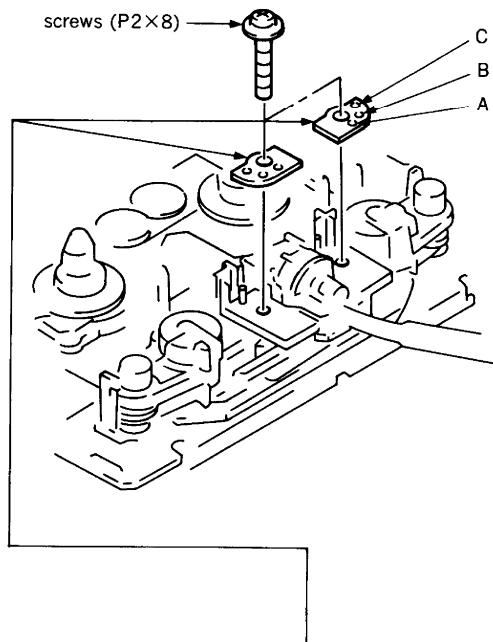


1. Set to the FWD (REV) playback mode with P-4-L300 and reading on VTVM.
2. Set to the FWD (REV) playback mode with P-4-A063 and confirm that the reading on the VTVM is within -12 ± 2 dB relative to the P-4-L300 playback level.
3. If the confirmation value are not satisfied, replace the adjustment shims and repeat the steps 1 and 2.



4. Set to the FWD (REV) playback mode and confirm that the screen pattern.
5. After the adjustments, apply suitable locking compound to the screws (P2×8).

Adjustment Location :

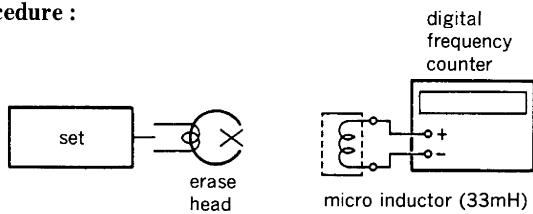


Head height adjustment shims

Part No.	t	Holes
3-384-356-01	0.30 ± 0.02	without
3-384-356-11	0.35 ± 0.02	A
3-384-356-21	0.40 ± 0.02	B
3-384-356-31	0.45 ± 0.02	C
3-384-356-41	0.50 ± 0.02	without

Record Bias Frequency Adjustment

Procedure :



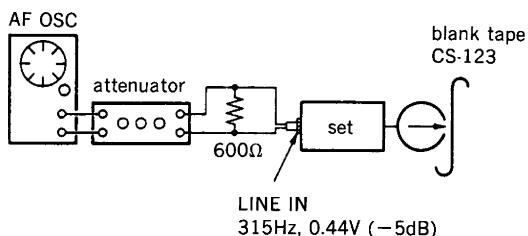
1. Set to no signal record mode.
2. Approach the micro inductor to the core portion of the erase head.
3. Adjust T301 so that the reading on digital frequency counter is within $107.5 \pm 2\text{kHz}$.

Adjustment Location : See page 22.

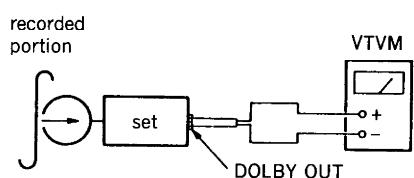
Record Level Adjustment

Procedure :

1. Mode : record



2. Mode : FWD playback



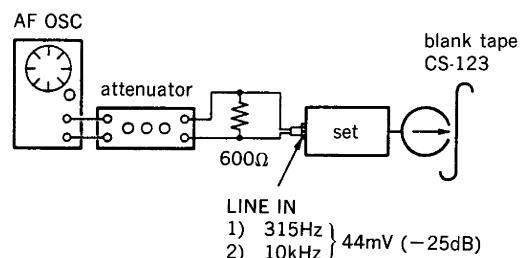
3. Confirm that the DOLBY OUT level difference at record and playback is within $0 \pm 0.5\text{dB}$ relative to the DOLBY OUT level at 315Hz with -5dB inputs from LINE IN. If the confirmation value are not satisfied, adjust RV102 (L-CH) and RV202 (R-CH) and repeat the steps 1 and 2.
4. Confirm that the REV playback mode is within confirmation value.

Adjustment Location : See page 22.

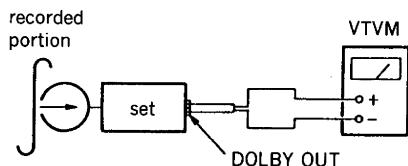
Record Bias Adjustment

Procedure :

1. Mode : record



2. Mode : FWD playback



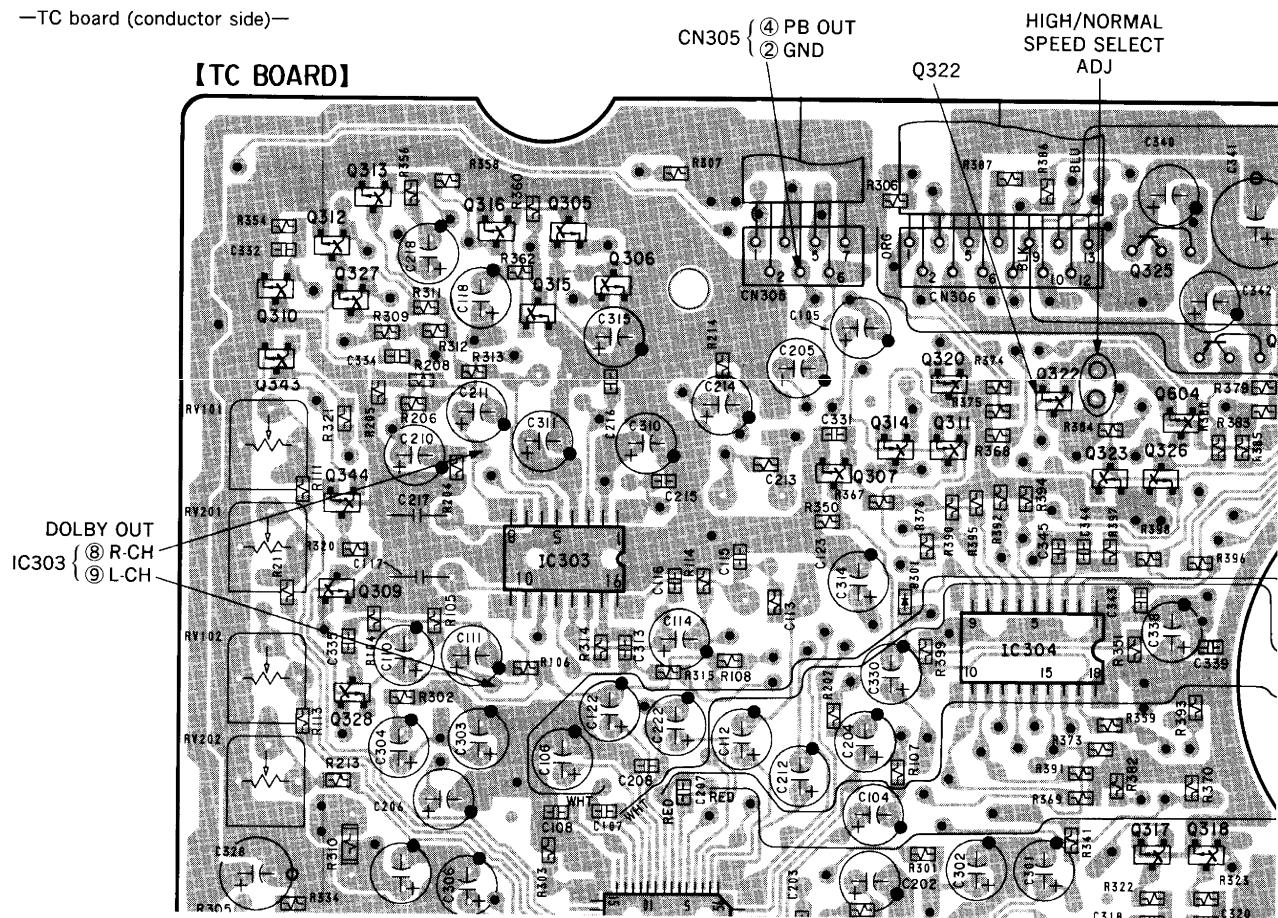
3. Confirm that the DOLBY OUT level difference between 315Hz with -25dB and 10kHz with -25dB is within $0 \pm 1\text{dB}$. If the confirmation value are not satisfied, adjust RV103 (L-CH) and RV203 (R-CH) and repeat the steps 1 and 2.
4. Confirm that the REV playback mode is within confirmation value.

Adjustment Location : See page 22.

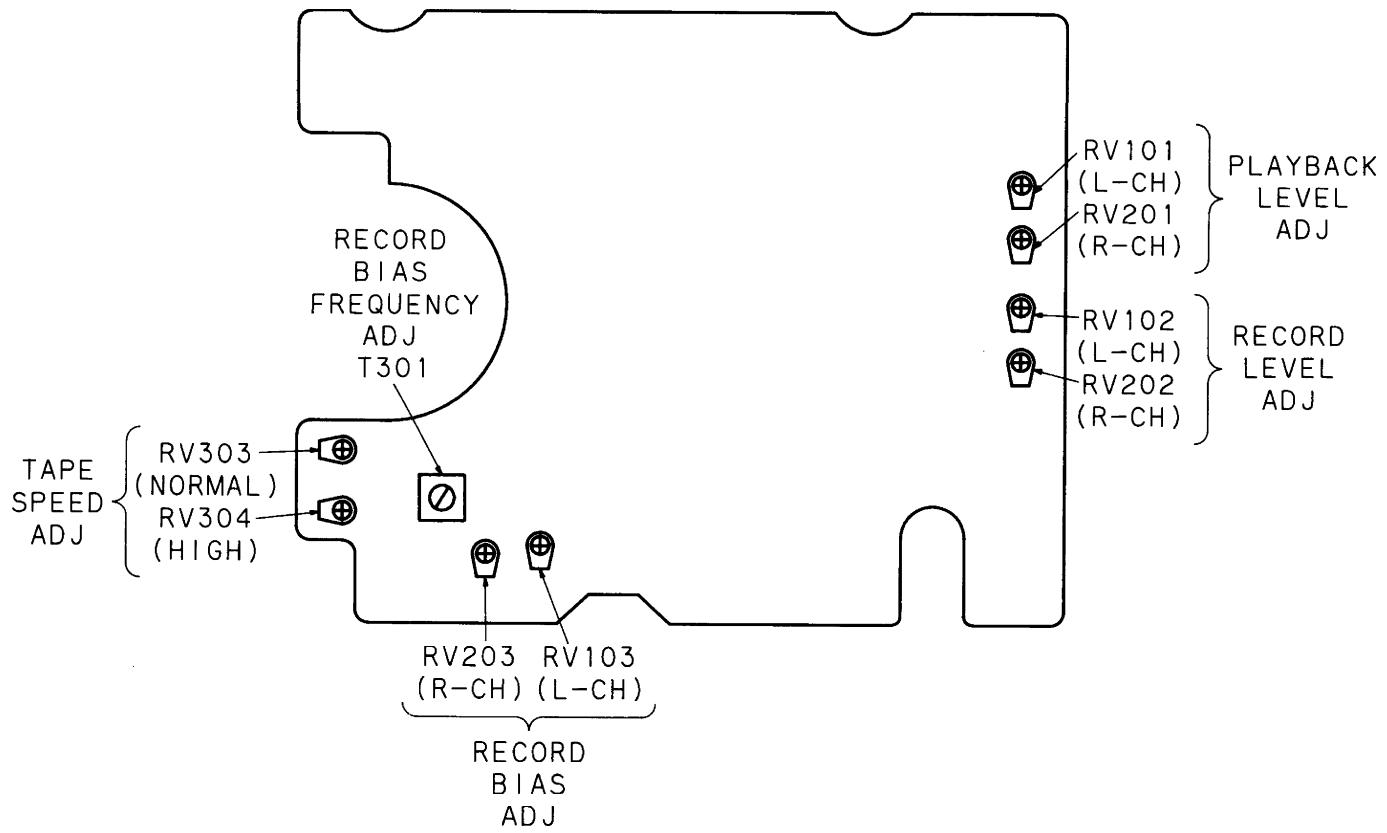
Deck Section Adjustment Location :

—TC board (conductor side)—

【TC BOARD】



—TC board (component side)—

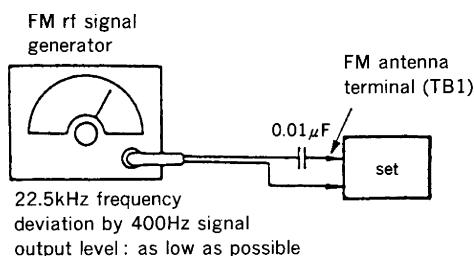


4-2. TUNER SECTION $0\text{dB}=1\mu\text{V}$

• FM Section

Setting :

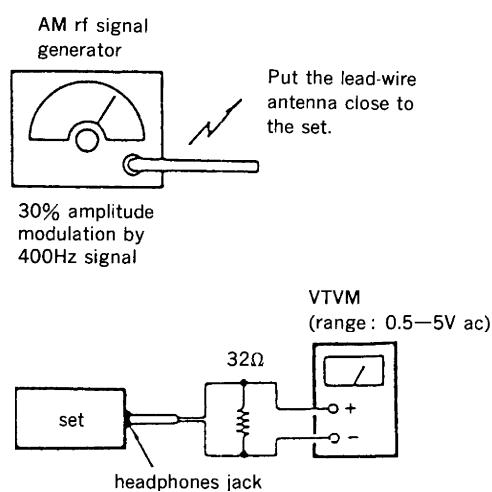
BAND switch : FM



• MW/LW Section

Setting :

BAND switch : MW/LW



FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	CT1
87.5MHz	108.0MHz

FM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	
10.7MHz	

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	CT5
531kHz	1,611kHz

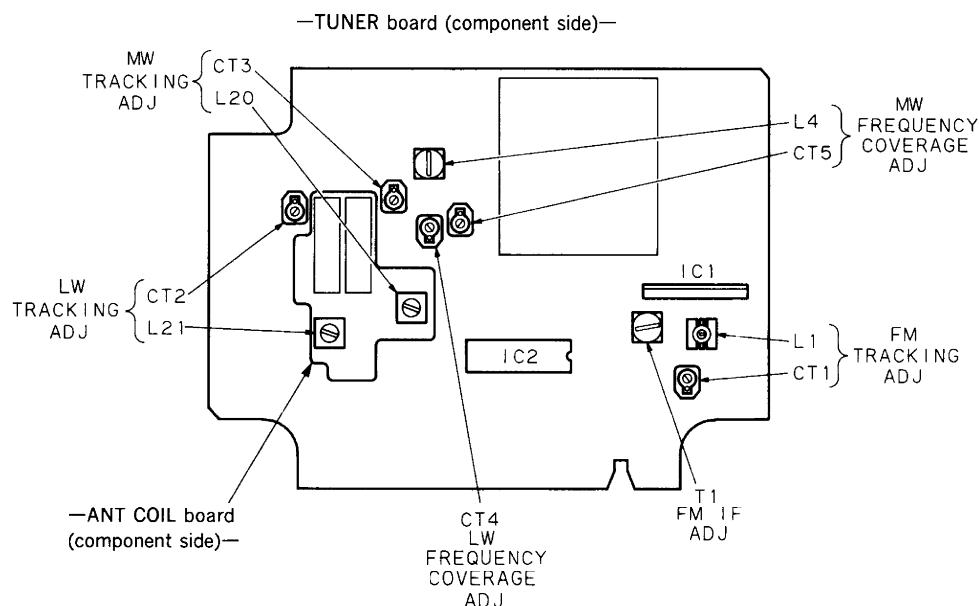
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L20	CT3
621kHz	1,404kHz

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT4	
153kHz	

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L21	CT2
162kHz	261kHz

• Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

Tuner Section Adjustment Location :



4-3. CD SECTION

Notes on Adjustment

1. Perform Traverse adjustment in test mode.
After adjustment, be sure to release test mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.
4. Short the both sides of C735 for stop operation of anti-shock circuit.

- Switch position
Function.....CD

Before Adjustment

Put the set into test mode and perform the following checks. Repair if there are any problems.

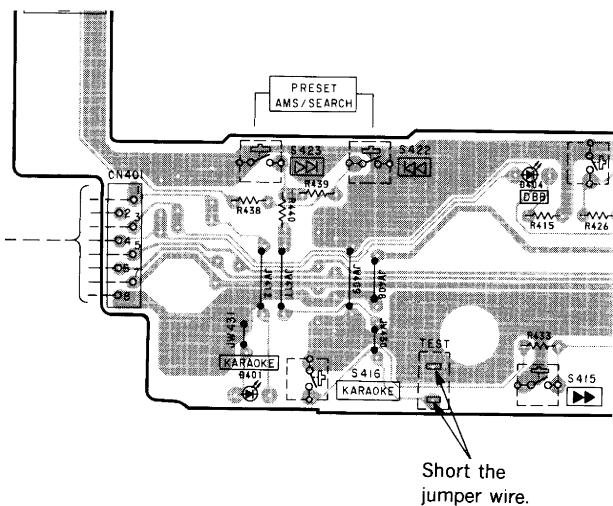
- In case of Test Mode

1. Short the TEST pattern on SW board with jumper wire.
2. While press the SOUND and KARAOKE buttons, insert the AC power supply.
3. The LCD back light is turn on, and later release the shorted jumper wire.
4. Then the LCD indicates **ACB----**, the test mode is set.

- Release the Test Mode

Push OFF the POWER button, the test mode is release.

SW board (conductor side)



- **Sled Motor Check**

Press the   buttons and confirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.

▷▷||: FOP moves to the outer circumference

◀◀ : FOP moves to the inner circumference

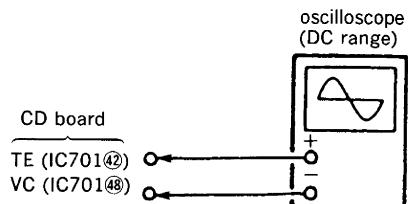
- Focus Search Check

1. Push the  button. (Focus search operation is performed continuously.)
2. Look at the FOP objective lens and confirm the it moves up and down smoothly, with no catching or abnormal noises.
3. Push the  button.
Confirm that focus search operation stops. If it does not, push the  button again longer.

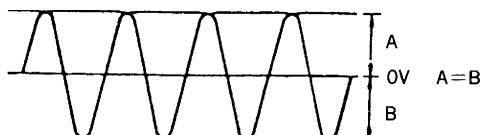
Traverse Adjustment

This adjustment is to be done when the optical pick-up block is replaced.

Procedure :



1. Connect the oscilloscope between TE and VC.
2. Put the set into test mode.
(LCD indication: **A[C]---**)
3. Push the **△** button to open the tray and insert disc (YEDS-18).
4. Push the **△** button once more to close the tray.
(LCD indication: **M[C]---**)
5. Press the **▷▷** and **◁◁** buttons to move the FOP to the center.
6. Push the **▷** button. (LCD indication: **PL 7 F**)
7. Push the **■** button. (LCD indication: **St 7 F**)
8. Push the **▷** button. (LCD indication: **[C] F -**)
9. Adjust RV704 so that the oscilloscope traverse waveform is symmetrical, as shown in the figure below.
10. Release the test mode after adjustment is completed.

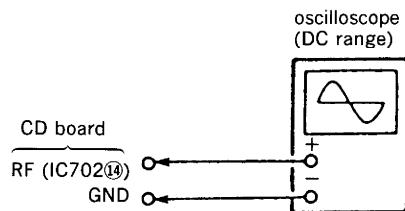


Adjustment Location: See page 27.

Focus Bias Adjustment

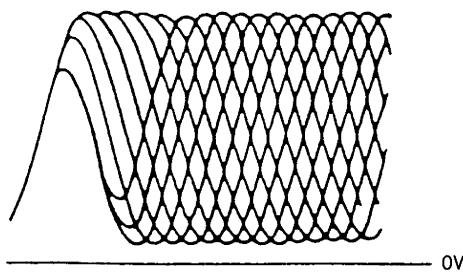
This adjustment is to be done when the optical pick-up block is replaced.

Procedure :



1. Connect the oscilloscope between RF and GND.
2. Insert disc (YEDS-18) and push the $\triangleright \lll$ button.
3. Adjust RV701 so that the oscilloscope waveform is maximum as shown in the figure below (eye pattern).

• RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Adjustment Location : See page 27.

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When gain adjustment is off, the symptoms below appear.

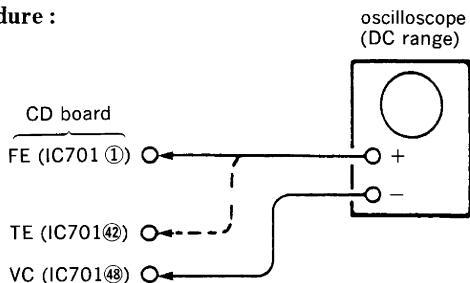
Symptoms	Gain	Focus	Tracking
• The time until music starts becomes longer for $\blacksquare \rightarrow \triangleright \lll$ on automatic selection. (\lll , \triangleright buttons pressed.) (Normally takes about 2 seconds.)	low	low or high	
• Music does not start and disc continues to rotate for $\blacksquare \rightarrow \triangleright \lll$ or automatic selection. (\lll , \triangleright buttons pressed.)	—	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	—	low
• More noise during 2-axis device operation.	high	high	

The following is a simple adjustment method.

—Simple Adjustment—

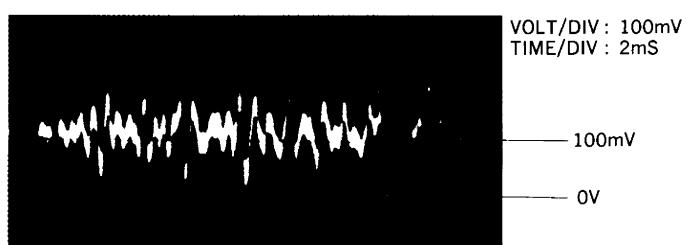
Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure :

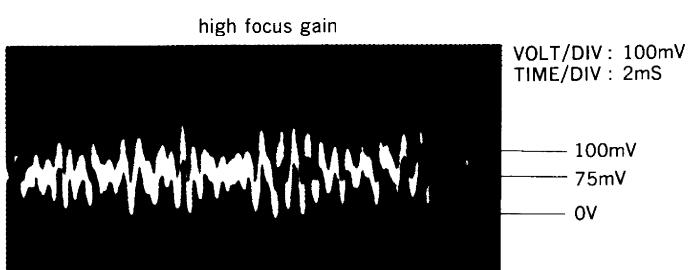
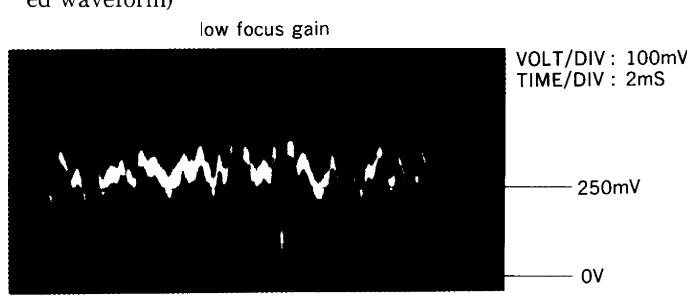


1. Keep the set horizontal. If the set not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert disc (YEDS-18) and push the \triangleright \square button.
3. Connect oscilloscope to FE on the CD board.
4. Adjustment RV702 so that the waveform is as shown in the figure below. (focus gain adjustment)

• Correct Example



- Incorrect Examples (DC level changes more than on adjusted waveform)

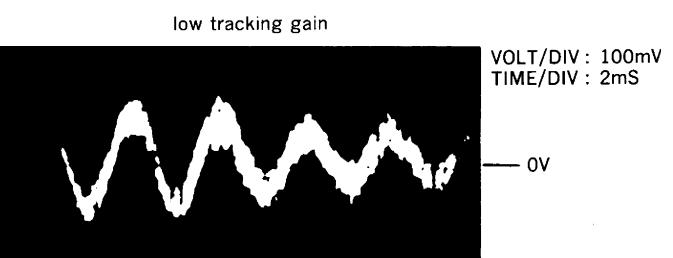


5. Connect oscilloscope to TE on the CD board.
6. Adjust RV703 so that the waveform is as shown in the figure below. (tracking gain adjustment)

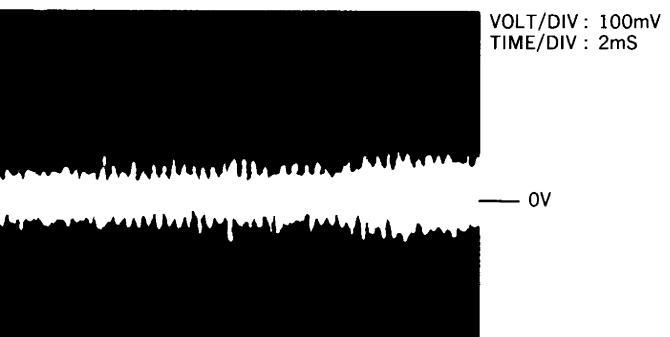
• Correct Example



- Incorrect Examples (fundamental wave appears)



high tracking gain
(higher fundamental wave than for low gain)

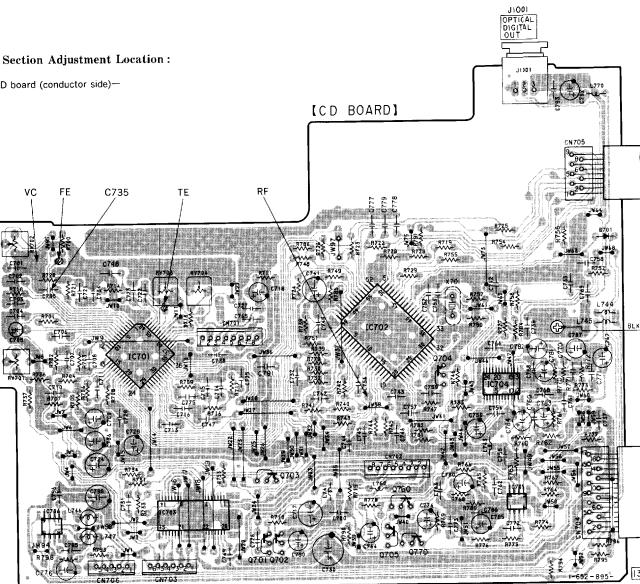


Adjustment Location : See page 27.

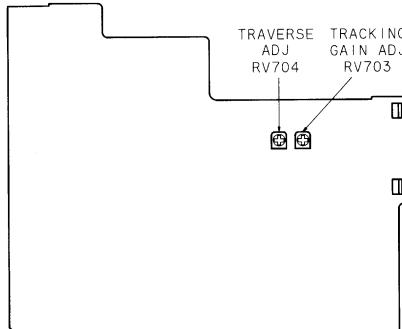
SECTION 5 DIAGRAMS

CD Section Adjustment Location :

—CD board (conductor side)—



—CD board (component side)—

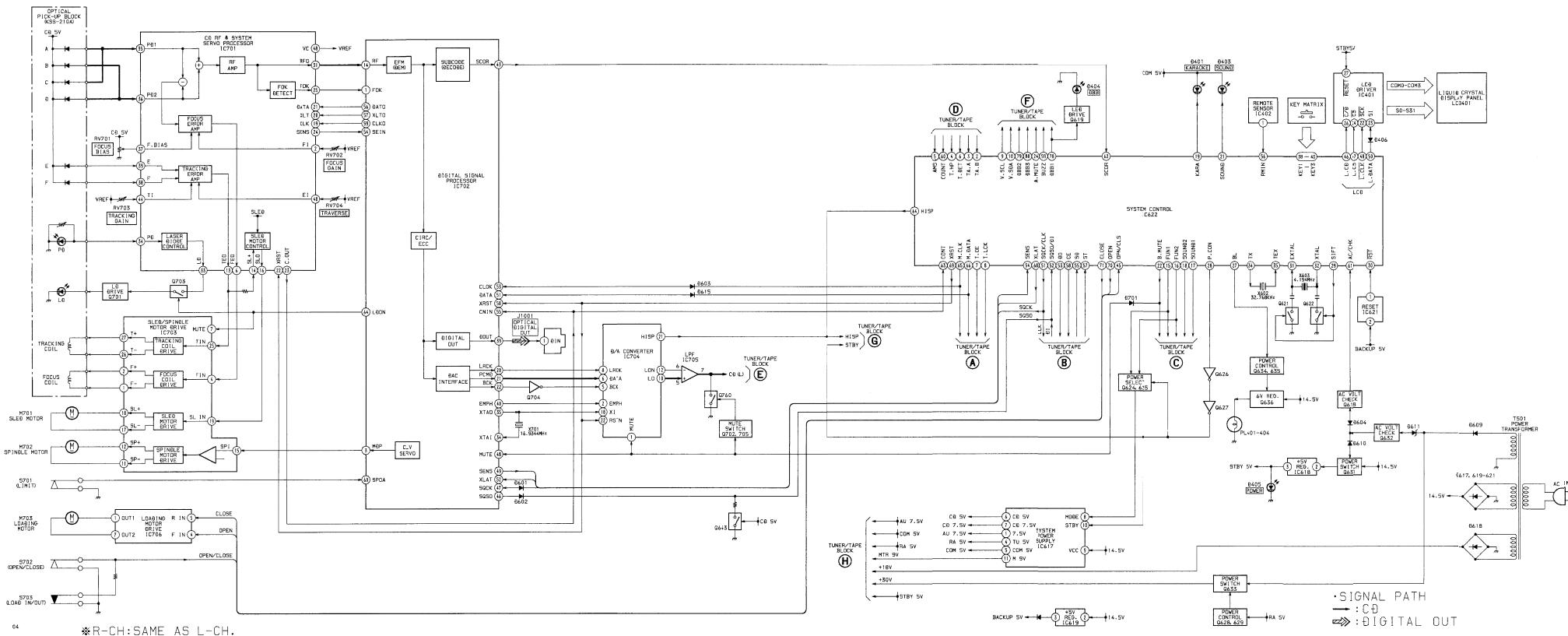


5-1. PIN DESCRIPTION • System Control (IC622 CXP84124-016Q)

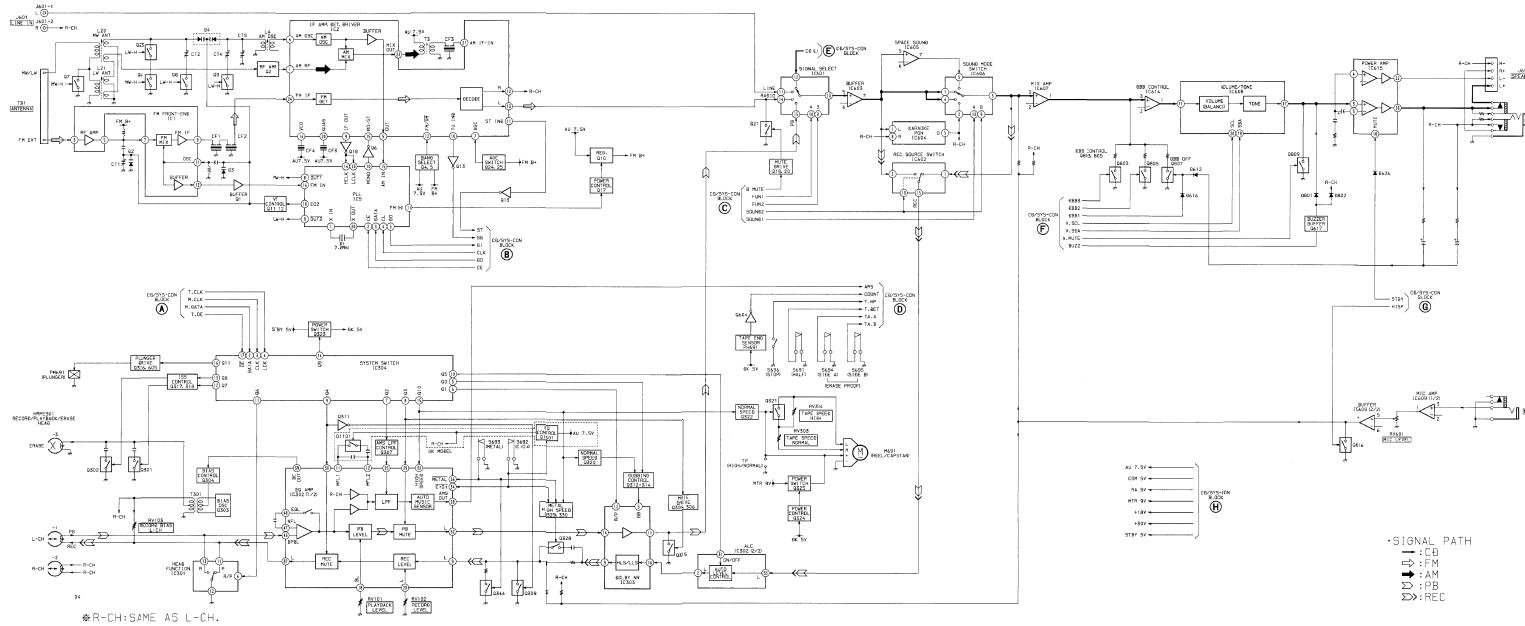
Pin No.	Pin Name	I/O	Pin Description
1	VOFF	O	Not used.
2	TA, B	I	Erase proof switch input of tape reverse side.
3	TA, A	I	Erase proof switch input of tape forward side.
4	T, HP	I	Head position switch input of tape.
5	AMS	I	AMS signal input of tape.
6	T, DET	I	Cassette detection switch input of tape.
7	T, OE	O	Enable control output of tape.
8	T, LCK	O	Load clock output of tape.
9	V, SCL	O	Serial clock output of electric volume.
10	V, SDA	O	Serial data output of electric volume.
11	ECHO1	O	Not used.
12	ECHO2	O	Not used.
13	ECHO3	O	Not used.
14	MIC/DET	I	Not used.
15	FUN1	O	Function select output
16	FUN2	O	Function select output
17	SOUND1	O	Sound mode select output
18	SOUND2	O	Sound mode select output
19	KARA	O	KARAOKE LED output
20	ECHO	O	Not used.
21	SOUND	O	SOUND LED output
22	B, MUTE	O	Block mute output
23	SP. MUTE	O	Not used.
24	A. MUTE	O	Audio mute output
25	NC	O	Not used.
26	NC	O	Not used.
27	BL	O	Back light control output of display.
28	P. CON	O	Power supply control output
29	SIFT	O	Shift clock output
30	RST	I	Reset input
31	EXTAL	I	4.19MHz oscillator input
32	XTAL	O	4.19MHz oscillator output
33	VSS	—	GND
34	TX	O	32.768kHz oscillator output
35	TEX	I	32.768kHz oscillator input
36	AVSS	AD GND	
37	BUSV	I	AD reference voltage input
38	KEY1	I	Key input
39	KEY2	I	Key input
40	KEY3	I	Key input
41	SEL1	I	Destination setting input
42	SEL2	I	Destination setting input
43	9/10K	I	9k/10k step select input of AM.
44	9VCHK	I	Decrease voltage detection of 9V.
45	OPN/CLS	I	OPEN/CLOSE detection switch input of CD tray.
46	L, CD	O	Command/data select output of LCD data.

Pin No.	Pin Name	I/O	Pin Description
47	L, CS	O	Chip select output of LCD driver.
48	L, CLK	O	Serial clock output of LCD.
49	NC	O	Not used.
50	L, DATA	O	Data output of LCD.
51	SQCK/CLK	O	Sub Q data read-out clock of CD and lock data input clock of radio.
52	SQSO/DI	I	Sub Q data input of CD and lock data input of radio.
53	DO	O	Frequency jump output of radio.
54	SENS	I	SENSE signal input of CD.
55	SD	I	Signal detection input of radio.
56	RMIN	I	Remote commander signal input.
57	ST	I	Stereo signal input of radio.
58	CE	O	PLL IC chip enable output of radio.
59	BEEP	O	Beep sound output
60	COUNT	I	Tape counter signal input
61	AC/CHK	I	AC input detection
62	SCOR	I	Sub code sync detection signal input of CD.
63	CONT	I	Track jump count signal input of CD.
64	HISP	O	Hi-speed/normal-speed select output of CD.
65	M, CLK	O	Serial clock output of tape and CD.
66	M, DATA	O	Serial data output of tape and CD.
67	NC	I	Not used.
68	XLAT	O	Serial data latch output of CD.
69	XRST	O	System reset output of CD.
70	OPEN	O	Loading motor drive output of CD. (open)
71	CLOSE	O	Loading motor drive output of CD. (close)
72	BUSV	—	VDD
73	NC	—	Not used.
74	CGLAT	O	Not used.
75	S, MUTE	O	Not used.
76	VSW	O	Not used.
77	G, DISC	I	CDG detection input
78	DBB1	O	Dynamic bass boost control output
79	DBB2	O	Dynamic bass boost control output
80	DBB3	O	Dynamic bass boost control output

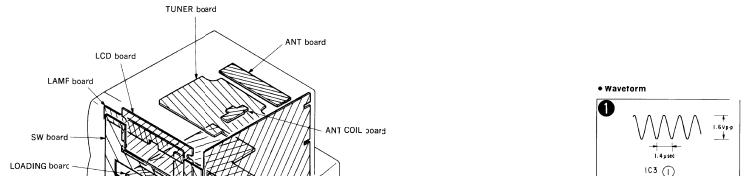
5-2. BLOCK DIAGRAM—CD/SYSTEM CONTROL SECTION—



5-3. BLOCK DIAGRAM—TUNER/DECK SECTION—



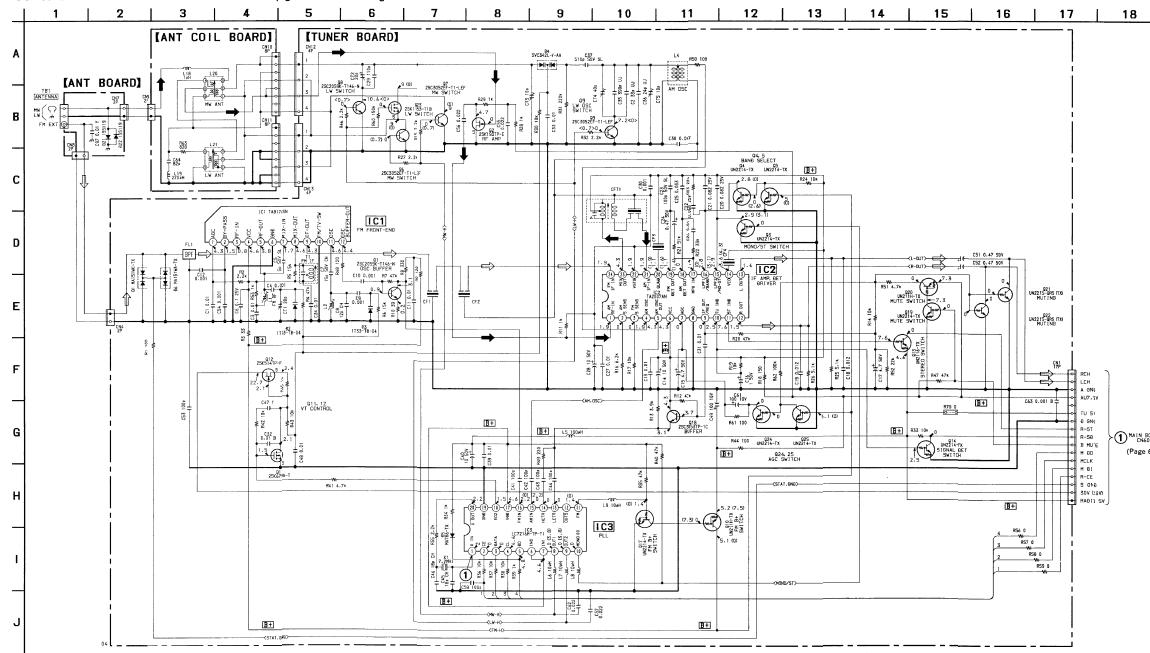
5-4 CIRCUIT BOARDS LOCATION



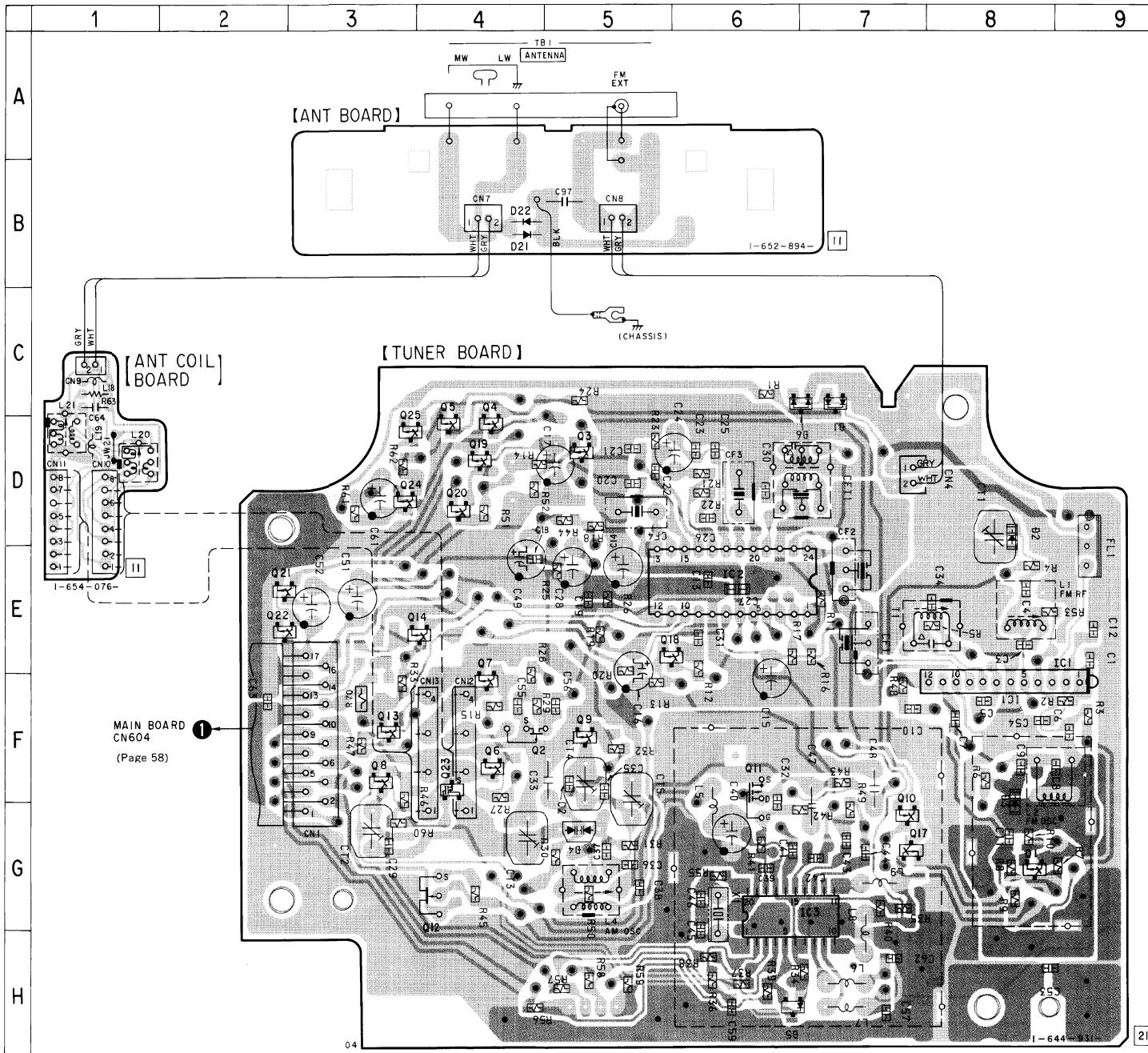
Notes:

- All resistors are in Ω unless otherwise noted. μF = μ Farad
- All capacitors are indicated except for electrolytics and tantalums
- All resistors are in (Ω) and 1/4 W or less unless otherwise specified.
- \triangle = Normal component.
- \square = B+ Line
- Voltage and waveforms are dc with respect to ground under normal (unadjusted) conditions.
- no mark: FM
- \times : MW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circle numbers refer to waveforms.
- Signal path:
- \Rightarrow : FM
- \Rightarrow : MW

5-5. SCHEMATIC DIAGRAM—TUNER SECTION— Refer to page 66 for IC Block Diagrams.



5-6. PRINTED WIRING BOARDS—TUNER SECTION— • Refer to page 55 for Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location
D1	C-7
D2	D-8
D3	F-8
D4	G-5
D5	H-6
D6	C-6
D21	B-4
D22	B-4
IC1	E-8
IC2	E-6
IC3	G-7
Q1	G-8
Q2	F-4
Q3	D-5
Q4	D-4
Q5	D-4
Q6	F-4
Q7	E-4
Q8	F-3
Q9	F-5
Q10	G-7
Q11	F-6
Q12	G-4
Q13	F-3
Q14	E-3
Q17	G-7
Q18	E-5
Q19	D-4
Q20	D-4
Q21	E-2
Q22	E-2
Q23	F-4
Q24	D-3
Q25	D-3

Note:

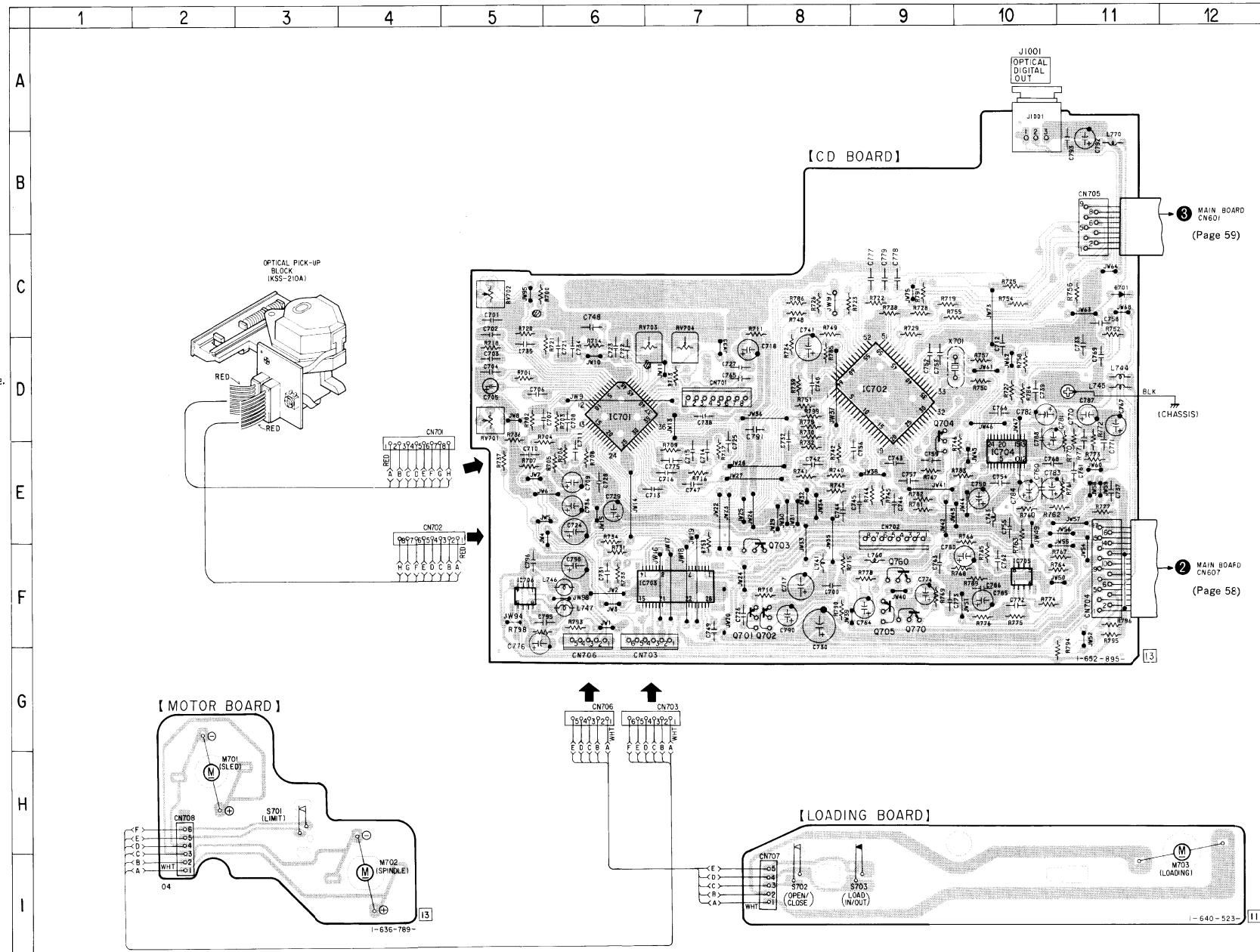
- : parts extracted from the component side.
- : Through hole.
- : indicates side identified with part number.
- : Pattern on the side which is seen.

* Pattern on the side which is seen.

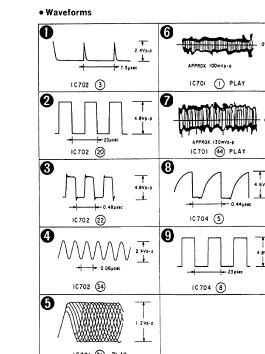
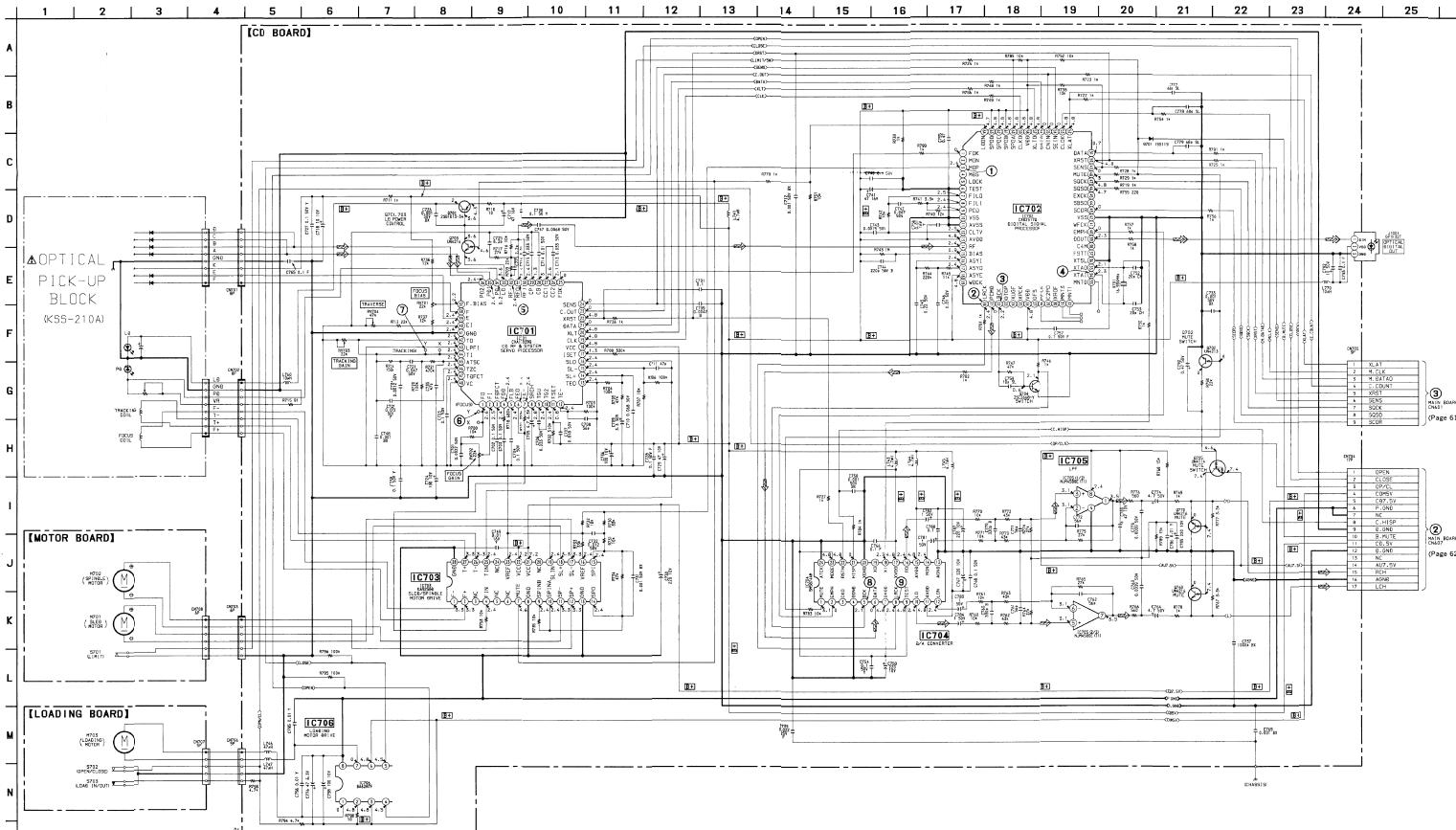
• Semiconductor Location

Ref. No.	Location
D701	C-11
IC701	D-6
IC702	D-9
IC703	G-7
IC704	E-10
IC705	F-10
IC706	F-5
J1001	B-10
Q701	F-7
Q702	F-8
Q703	F-8
Q704	D-9
Q705	F-9
Q760	F-9
Q770	F-9

5-7. PRINTED WIRING BOARDS—CD SECTION— • Refer to page 55 for Semiconductor Lead Layouts.



5-8. SCHEMATIC DIAGRAM—CD SECTION— • Refer to page 66 for IC Block Diagrams.

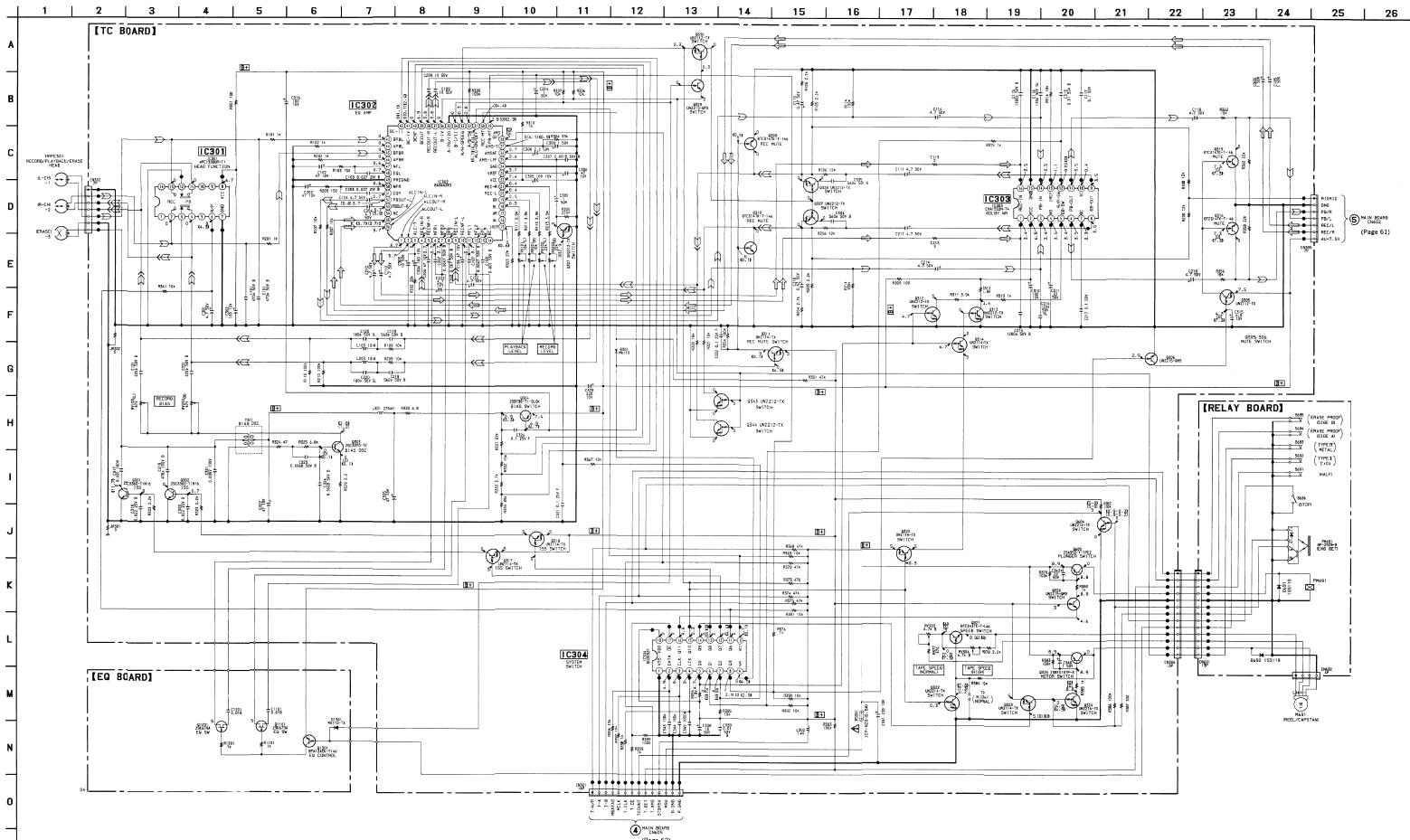


Note :
 • All capacitors are in μ F unless otherwise noted. If μ F 50WV or less are not indicated except for electrolytics and tantalums.
 • All resistors are in 2 ohm and 1/4 W or less unless otherwise

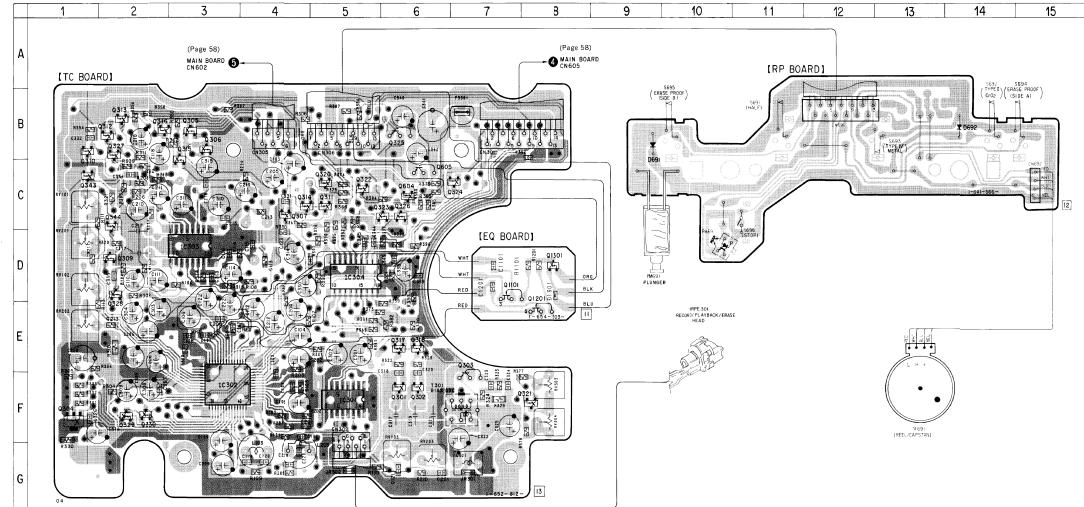
Note : The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

- \triangle : B+ Line
- \triangle : Components for repair.
- Voltage and waveforms are dc with respect to ground under no-signal condition.
- No load condition.
- Voltages are taken with a VOM (Input Impedance 1M Ω). Voltage variations may be noted due to normal production tolerance.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerance.
- Circled numbers refer to waveforms.
- Signal path.
- \rightarrow : CD
- \rightarrow : digital out

5-9. SCHEMATIC DIAGRAM—DECK SECTION— * Refer to page 66 for IC Block Diagrams.



5-10. PRINTED WIRING BOARDS—DECK SECTION—



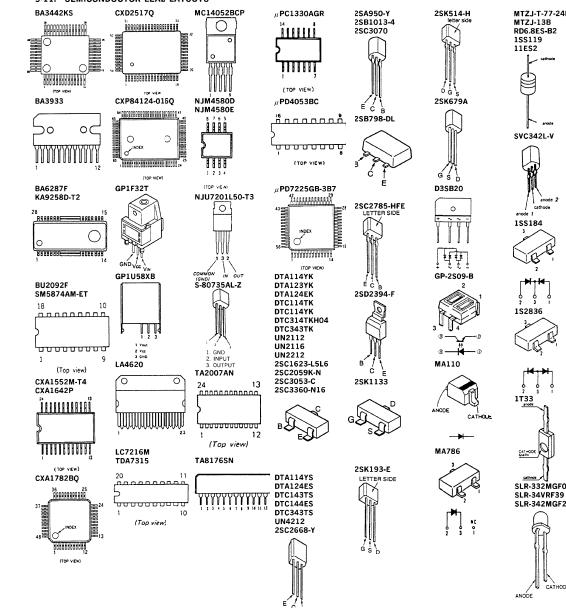
- Semiconductor Location

Ref. No.	Location
D301	D-4
D302	D-5
D302	B-14
D1301	D-8
IC301	F-5
IC302	F-3
IC303	D-3
IC304	D-5
PH691	D-10
Q301	F-6
Q302	F-6
Q303	F-1
Q305	B-3
Q306	B-3
Q307	C-4
Q309	D-2
Q310	D-2
Q311	C-5
Q312	B-2
Q313	B-2
Q314	C-4
Q315	B-3
Q316	B-3
Q317	E-6
Q318	E-6
Q320	C-5
Q321	F-8
Q322	C-2
Q323	C-5
Q324	C-7
Q325	B-6
Q326	C-6
Q327	D-2
Q328	D-2
Q329	F-2
Q330	F-2
Q343	C-1
Q344	C-2
Q604	C-8
Q605	D-6
Q101	D-7
Q1201	E-8

Note :

- : parts extracted from the component side
- : parts extracted from the conductor side
- : Through hole.
- : indicates side identified with part number
- : Pattern on the side which is seen.

5-11. SEMICONDUCTOR LEAD

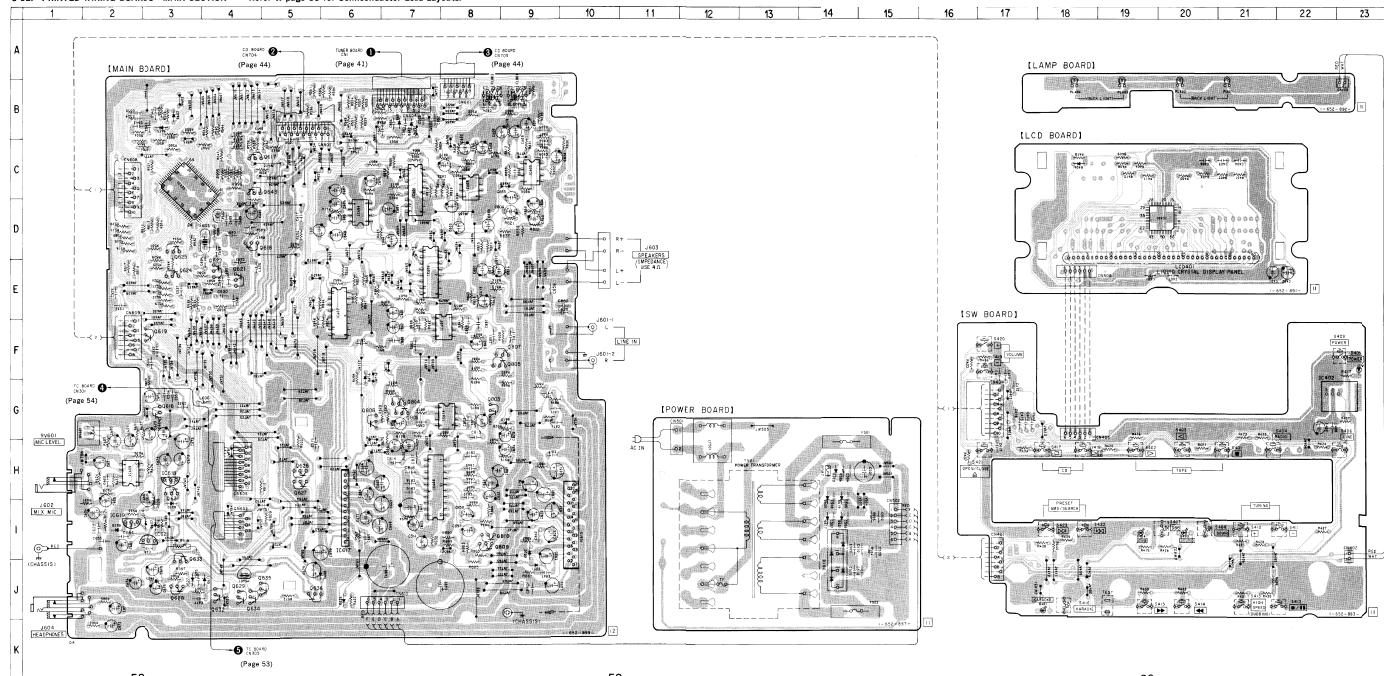


* Semiconductor Location

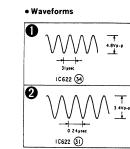
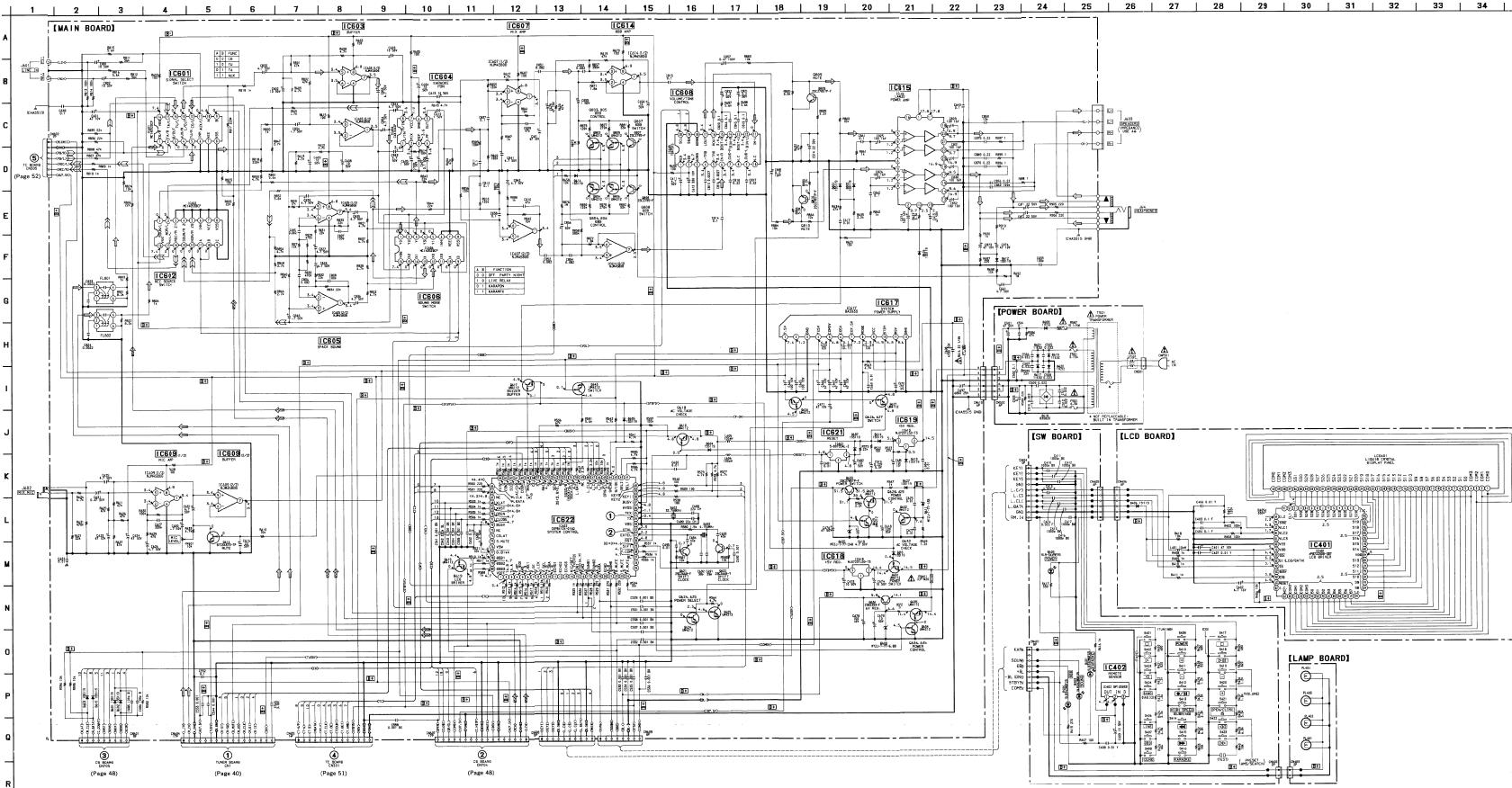
Ref. No.	Location	Ref. No.	Location
D401	J18	IC607	F-3
D403	J20	IC608	H7
D404	J19	IC609	H2
D406	C18	IC614	G3
D401	B7	IC615	I-10
D601	G7	IC616	H-6
D603	B-3	IC618	H3
D604	E-5	IC619	I-2
D605	D-4	IC620	I-5
D607	I-3	IC622	G-3
D608	J-5		
D610	H-14	Q616	G3
D610	I-3	Q617	G4
D611	J-4	Q618	D4
D612	G-3	Q619	I-3
D613	I-2	Q621	E-4
D614	I-3	Q622	E-1
D615	G-3	Q623	I-2
D616	F-6	Q625	D3
D617	I-14	Q626	H5
D618	J-14	Q627	H6
D619	H-14	Q628	J-3
D620	H-14	Q629	J-4
D621	I-11	Q630	H-3
D625	J-3	Q632	I-4
D626	J-6	Q633	I-3
D801	J-9	Q635	J-4
D802	I-9	Q636	J-5
IC401	D-19	Q803	G-3
IC402	G-22	Q804	G-7
IC901	C-7	Q805	I-6
IC902	E-6	Q806	G-7
IC603	C-8	Q807	F-9
IC604	D-6	Q808	G-5
IC605	C-9	Q809	I-5
IC606	E-7	Q810	I-8

Note:
 • D--- : parts extracted from the component side.
 • ■■■■■ : Pattern on the side seen.

5-12. PRINTED WIRING BOARDS—MAIN SECTION— * Refer to page 55 for Semiconductor Lead Layouts.



5-13. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 66 for IC Block Diagrams.



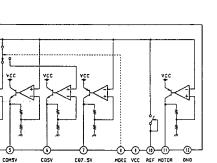
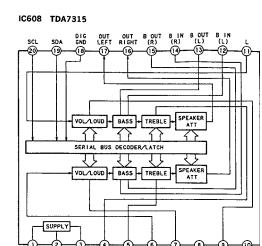
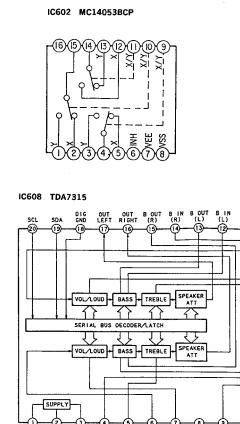
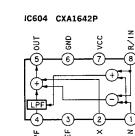
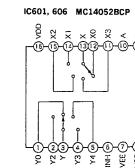
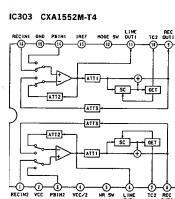
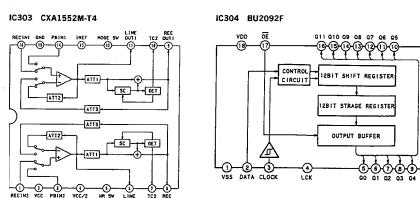
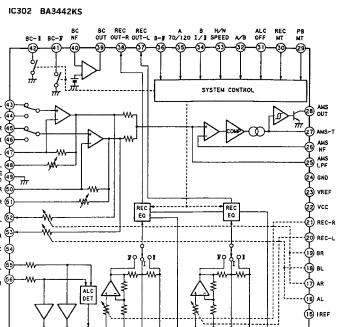
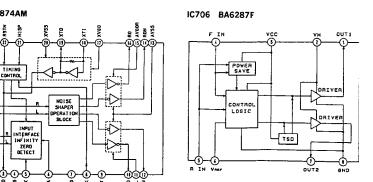
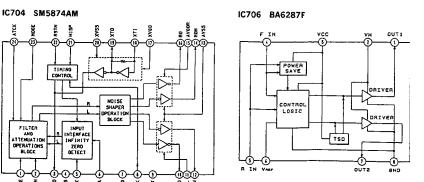
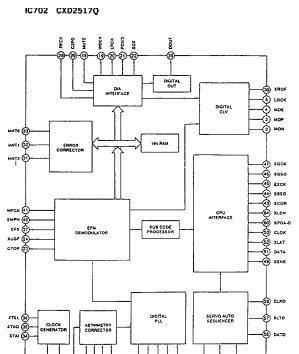
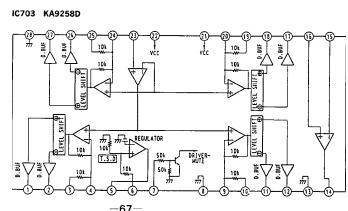
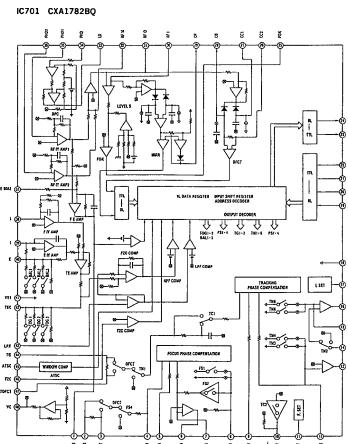
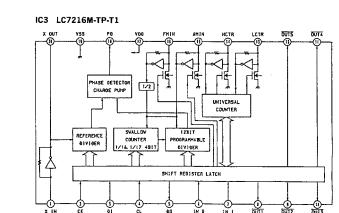
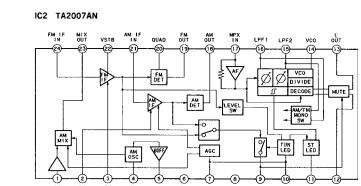
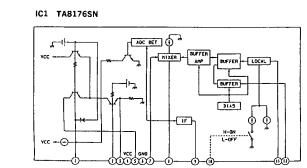
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note : The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

- **fm** : flexible resistor.
- **(S)** : B = Line
- Voltage and waveforms are dc with respect to ground unless otherwise specified.
- no mark : FM
- < > : MW
- () : (DESK)
- \times : Implies measurement point
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path:
 - : FM
 - : PB
 - : REC
 - : CM

• IC Block Diagrams



SECTION 6

EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
Example :

KNOB, BALANCE (WHITE)...(RED)

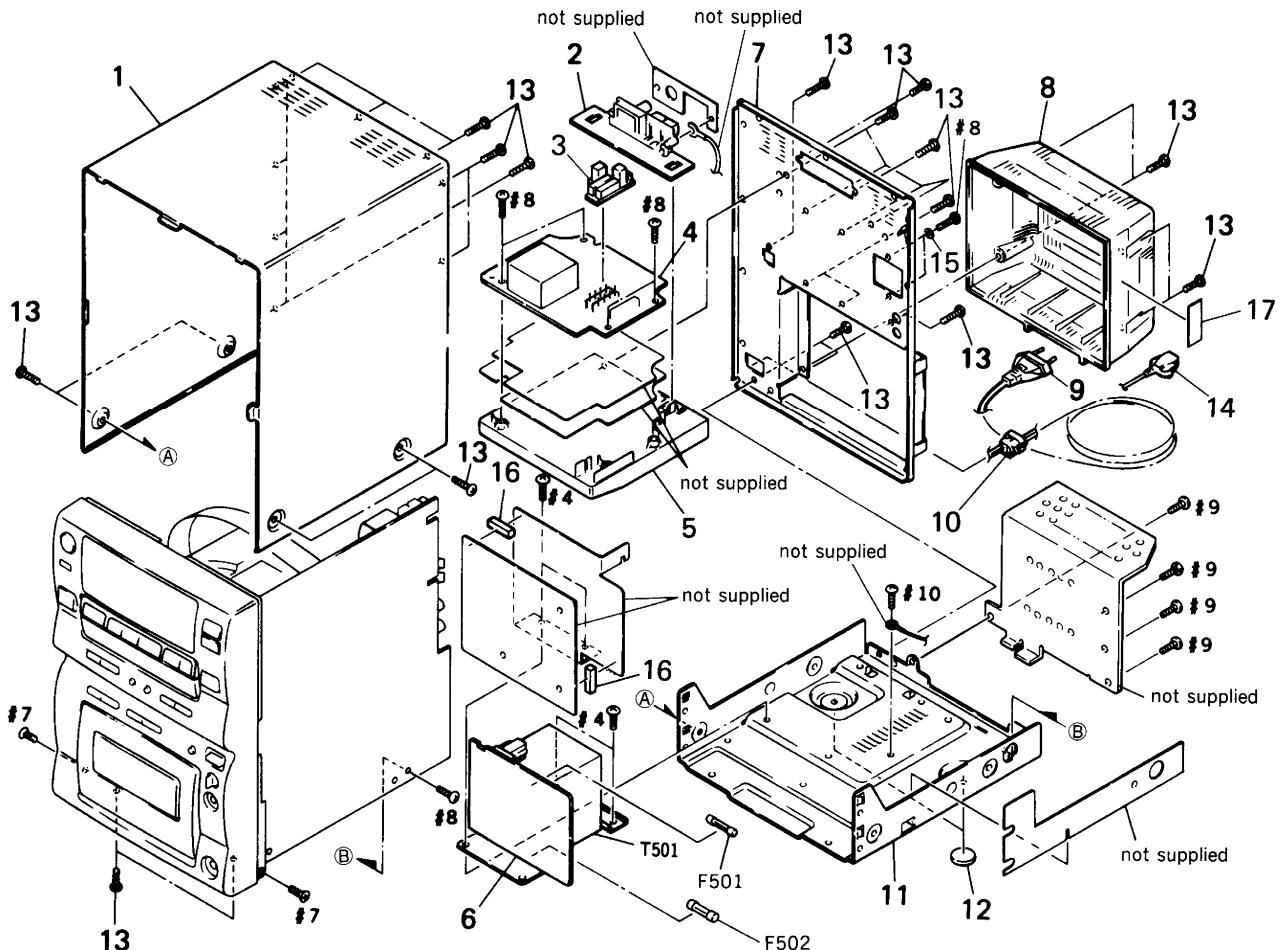
↑ 1

Parts Color Cabinet's Color

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark Δ or dotted line with mark. Δ are critical for safety. Replace only with part number specified.

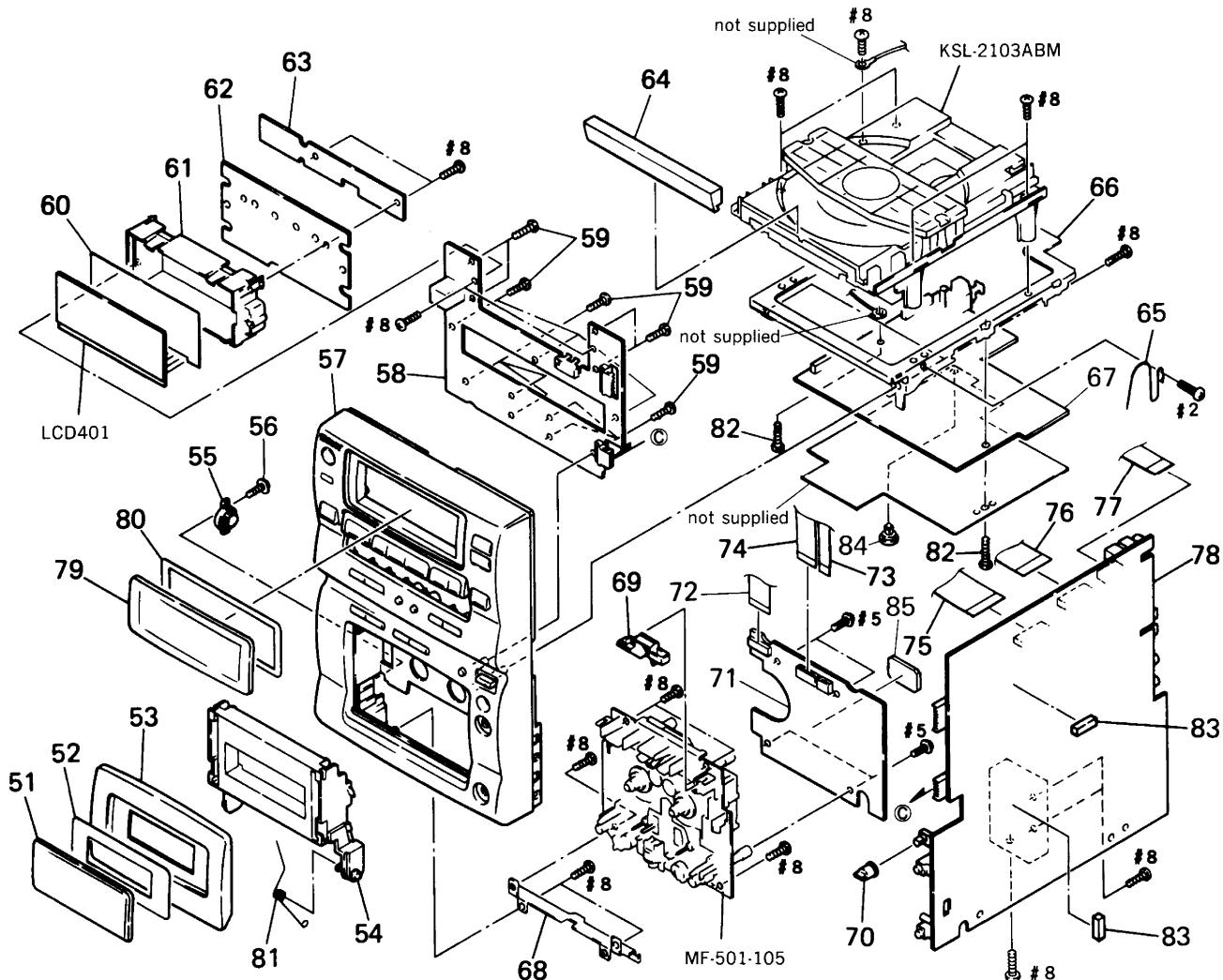
6-1. CASE SECTION



Ref. No.	Part No.	Description	Rema
* 1	3-914-126-01	CASE (UPPER)	
* 2	1-652-894-11	ANT BOARD	
* 3	1-654-076-11	ANT COIL BOARD	
* 4	A-3269-703-A	TUNER BOARD, COMPLETE (AEP)	
* 4	A-3269-704-A	TUNER BOARD, COMPLETE (UK)	
* 5	3-914-153-01	CHASSIS (TUNE)	
* 6	1-652-897-11	POWER BOARD	
* 7	3-915-294-31	CASE (REAR) (AEP)	
* 7	3-915-294-61	CASE (REAR) (UK)	
8	3-914-125-01	COVER (HEAT SINK)	
▲9	1-575-651-11	CORD, POWER (AEP)	
10	3-703-244-11	BUSHING (2104), CORD	

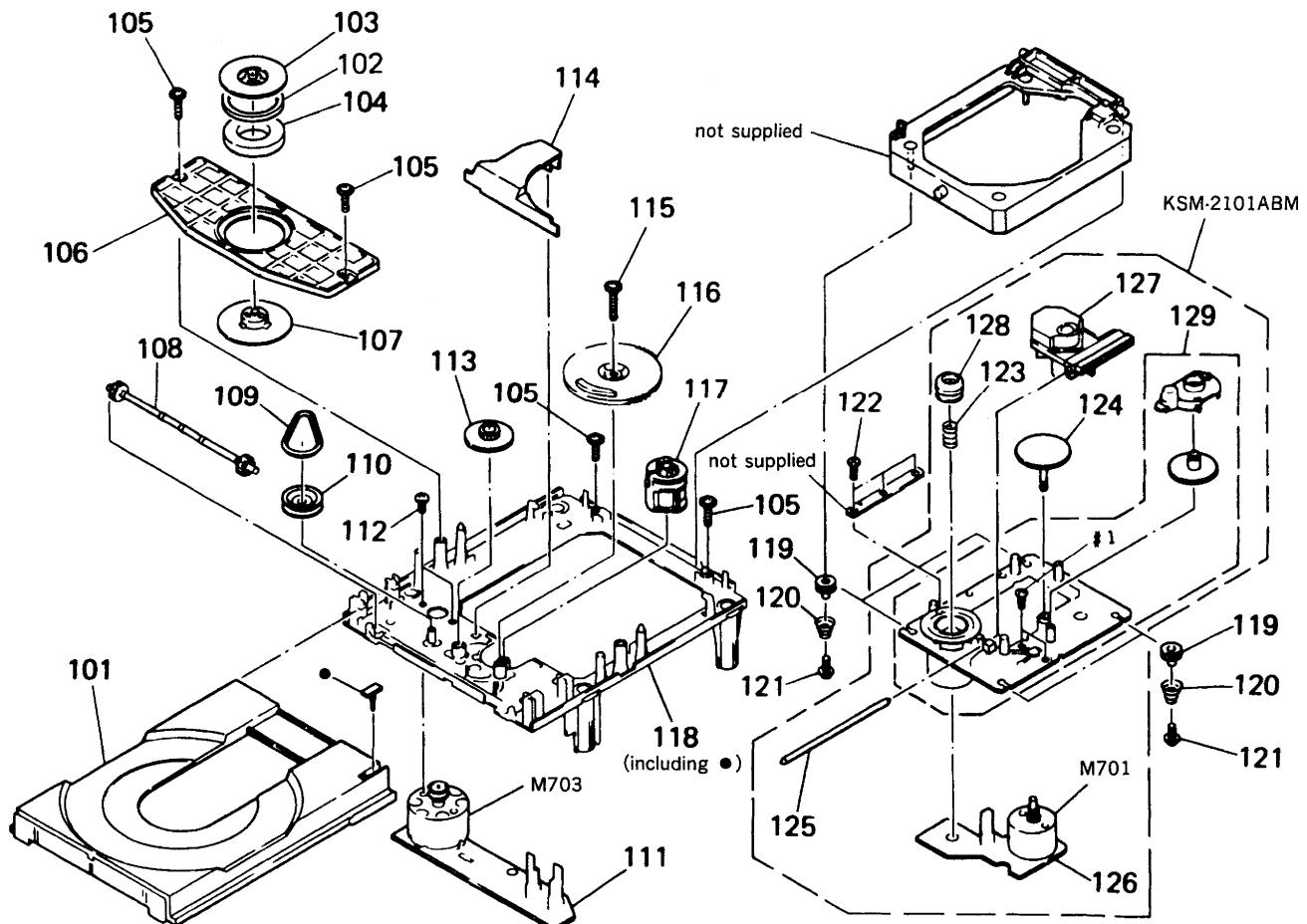
Ref. No.	Part No.	Description	Remark
* 11	3-914-131-01	CASE (LOWER)	
12	3-940-657-01	FOOT (FELT)	
13	3-948-500-01	SCREW, BV (3X10) RING	
△14	1-696-570-21	CORD, POWER (UK)	
15	3-919-169-01	WASHER, INSULATING	
16	9-911-841-XX	SPACER	
* 17	4-941-548-01	LABEL, CLASS (1)	
△F501	1-532-237-00	FUSE (3. 15A)	
△F502	1-532-506-51	FUSE (6. 3A) (UK)	
△F502	1-576-264-11	FUSE (6. 3A) (AEP)	
△T501	1-426-872-11	TRANSFORMER, POWER (AEP)	
△T501	1-426-873-11	TRANSFORMER, POWER (UK)	

6-2. FRONT PANEL SECTION

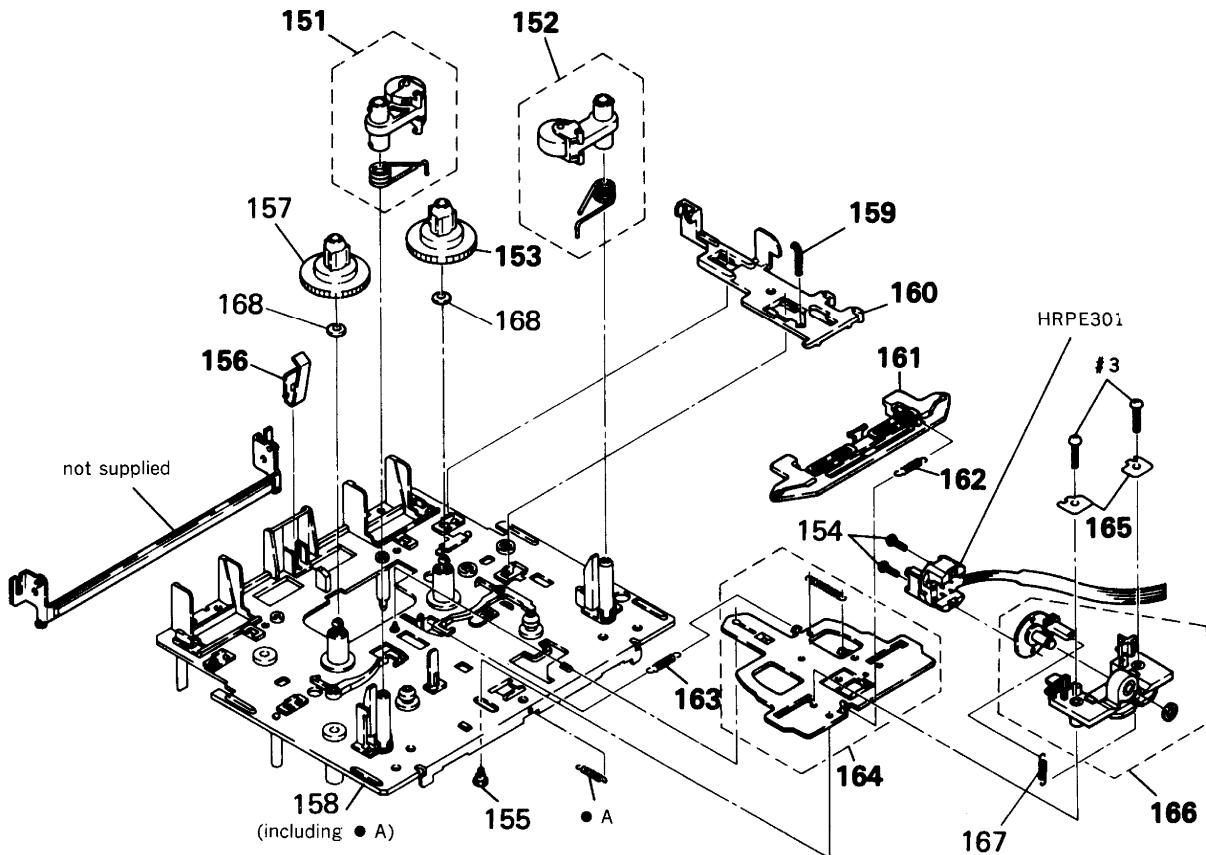


Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-914-145-01	WINDOW (CASSETTE)		69	3-913-176-01	LEVER (EJECT)	
52	3-914-146-01	SHEET (CASSETTE), ADHESIVE		70	3-914-130-01	KNOB (VOL)	
53	3-915-284-01	LID, CASSETTE		* 71	A-3269-686-A	TC BOARD, COMPLETE (AEP)	
54	X-3368-462-1	HOLDER ASSY, CASSETTE		* 71	A-3269-688-A	TC BOARD, COMPLETE (UK)	
55	3-343-248-21	DAMPER (P), SMALL		72	1-765-436-11	WIRE, PARALLEL (FFC) (14 CORE)	
56	4-960-167-01	SCREW (3X8) (DIA. 10), +WH		73	1-765-437-11	WIRE, PARALLEL (FFC) (7 CORE)	
57	X-3369-261-1	PANEL ASSY, FRONT		74	1-765-435-11	WIRE, PARALLEL (FFC) (13 CORE)	
* 58	A-3269-674-A	SW BOARD, COMPLETE (AEP)		75	1-765-640-11	WIRE, PARALLEL (FFC) (17 CORE)	
* 58	A-3269-676-A	SW BOARD, COMPLETE (UK)		76	1-765-434-11	WIRE, PARALLEL (FFC) (17 CORE)	
59	4-931-757-41	SCREW (DIA. 2.6X10) (IT3B)		* 77	1-766-695-11	WIRE, PARALLEL (FFC) (9 CORE)	
60	3-914-152-01	ILLUMINATOR		* 78	A-3269-667-A	MAIN BOARD, COMPLETE (AEP)	
61	3-914-151-01	HOLDER (LCD)		* 78	A-3269-669-A	MAIN BOARD, COMPLETE (UK)	
* 62	1-652-891-11	LCD BOARD		79	3-914-128-01	WINDOW (LCD)	
* 63	1-652-892-11	LAMP BOARD		80	3-914-129-01	SHEET (LCD), ADHESIVE	
64	3-915-280-01	LID (CD)		81	3-914-133-01	SPRING (CASSETTE)	
65	3-916-002-01	SPRING (LEVER)		82	3-325-679-31	SCREW, TAPPING +BV 3X14	
* 66	3-914-147-01	CHASSIS (CD)		* 83	3-941-223-01	CUSHION (RS1), RUBBER	
* 67	A-3269-662-A	CD BOARD, COMPLETE (AEP)		84	3-531-576-01	RIVET	
* 67	A-3269-666-A	CD BOARD, COMPLETE (UK)		* 85	A-3276-611-A	EQ BOARD, COMPLETE	
* 68	3-913-467-01	BRACKET (MD)			LCD401 1-810-513-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-3. CD SECTION

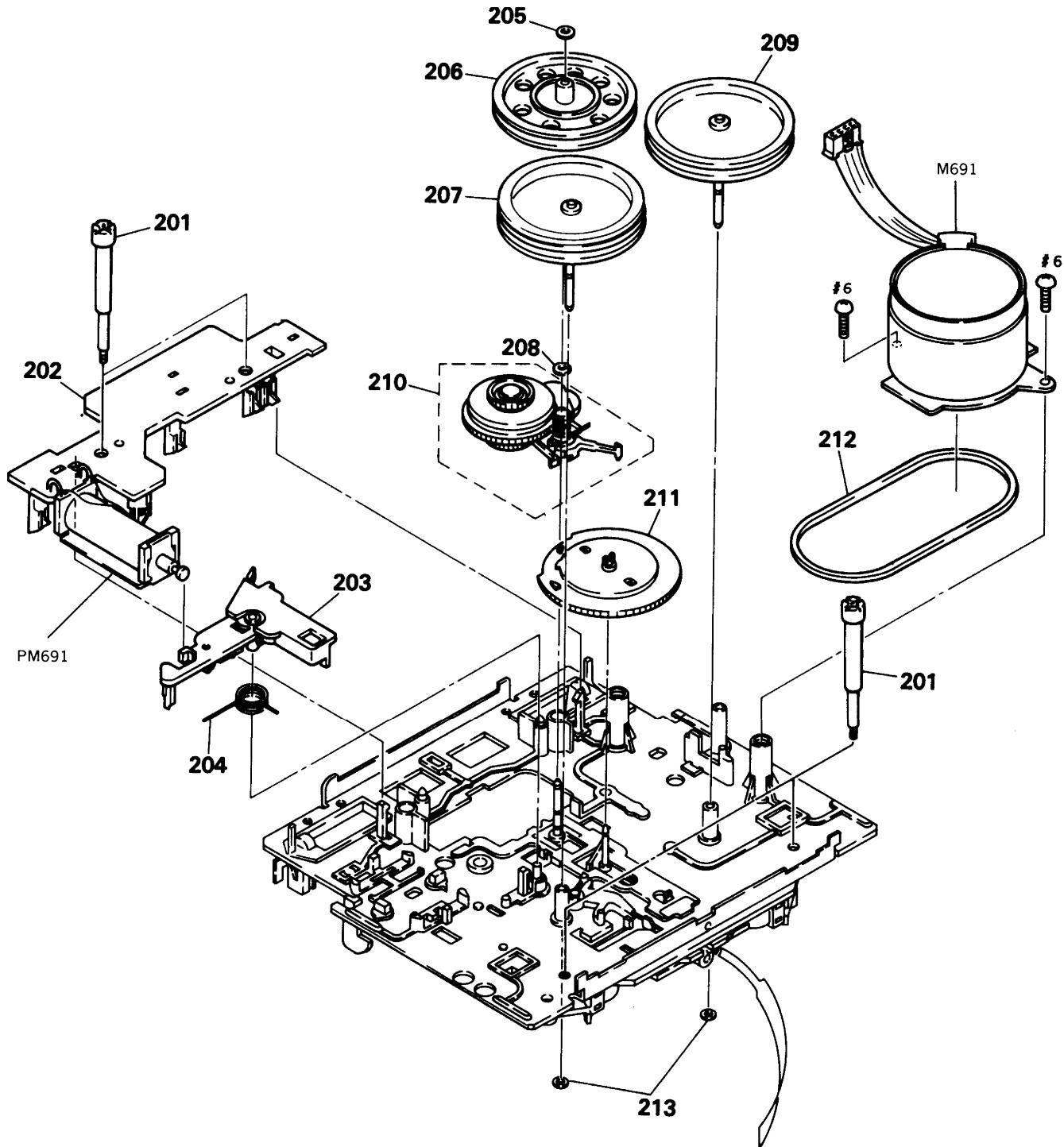
(LOADING SECTION : KSL-2103ABM)
(OPTICAL PICK-UP SECTION : KSM-2101ABM)

6-4. MECHANISM DECK SECTION 1 (MF-501-105)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3364-790-1	PINCH LEVER (R) ASSY		163	3-377-673-01	SPRING, TENSION	
152	X-3364-789-1	PINCH LEVER (N) ASSY		* 164	X-3364-792-1	BASE ASSY, HEAD	
153	X-3364-791-1	GEAR (REEL) ASSY		* 165	3-384-356-01	SHIM (t=0.3)	
154	3-316-938-51	SCREW (B1.4X6), TAPPING		* 165	3-384-356-11	SHIM (t=0.35)	
155	3-382-444-01	SCREW (STOPPER)		* 165	3-384-356-21	SHIM (t=0.4)	
156	3-384-106-01	DETENT, CASSETTE		* 165	3-384-356-31	SHIM (t=0.45)	
157	X-3368-350-1	GEAR (REEL S) ASSY		* 165	3-384-356-41	SHIM (t=0.5)	
* 158	X-3366-586-2	CHASSIS (DIVISION) ASSY		166	X-3365-822-1	GUIDE ASSY (Q), HEAD	
159	3-377-670-01	SPRING, COMPRESSION		167	3-377-663-03	SPRING, TENSION	
160	3-377-709-01	LEVER (A), EJECT		168	3-906-038-01	WASHER	
161	3-377-700-01	SLIDER (NR)		HRPE301 1-543-991-11 HEAD, MAGNETIC (REC/PB/ERASE)			
162	3-377-666-01	SPRING, TENSION					

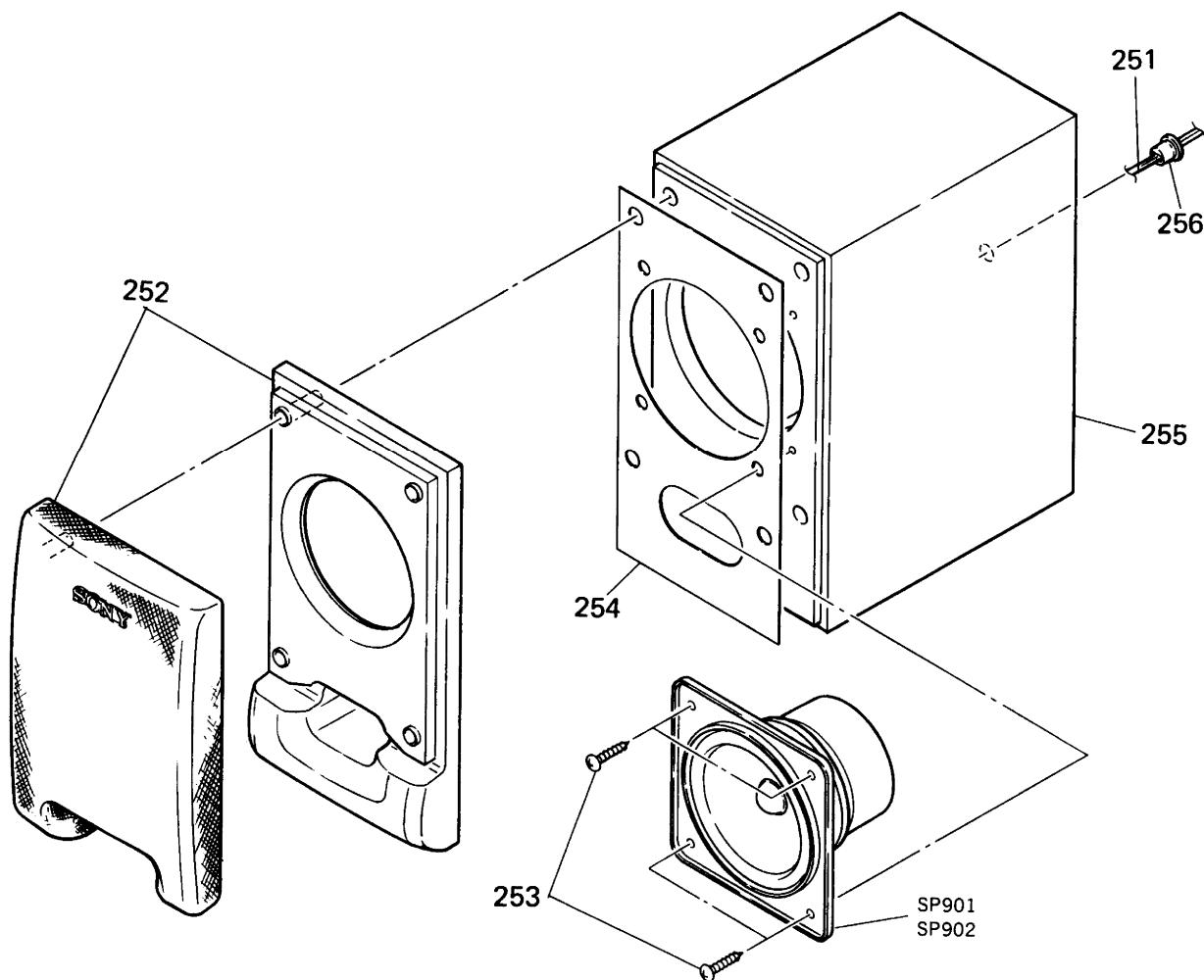
6-5. MECHANISM DECK SECTION 2 (MF-501-105)



Ref. No.	Part No.	Description	Remark
* 201	3-377-696-01	SUPPORT	
* 202	1-641-566-11	RELAY BOARD	
203	3-377-716-01	LEVER, TRIGGER	
204	3-377-687-01	SPRING (TRIGGER LEVER), TORSION	
205	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
206	3-377-706-01	PULLEY	
207	X-3365-789-1	FLYWHEEL (N) ASSY	
208	3-377-664-01	RING RETAINING	

Ref. No.	Part No.	Description	Remark
209	X-3365-790-1	FLYWHEEL (R) ASSY	
210	X-3364-793-1	LEVER ASSY, FR	
211	3-377-798-01	GEAR (CAM)	
212	3-377-688-01	BELT	
213	3-343-358-12	RING, RETAINING	
M691	A-3263-138-A	MOTOR ASSY (REEL/CAPSTAN)	
PM691	1-454-595-11	SOLENOID, PLUNGER	

6-6. SPEAKER SECTION



Ref. No.	Part No.	Description	Remark
251	1-765-399-11	CORD (SPEAKER)	
252	X-3369-282-1	PANEL ASSY, SPEAKER	
253	4-874-614-21	SCREW (4) (3.5X14), TAPPING	
254	3-915-288-01	PACKING	

Ref. No.	Part No.	Description	Remark
255	3-915-287-01	BOX, SPEAKER	
256	4-870-003-00	CLIPPER, CORD	
SP901	1-504-611-11	SPEAKER (10CM) (L-CH)	
SP902	1-504-611-11	SPEAKER (10CM) (R-CH)	

SECTION 7

ELECTRICAL PARTS LIST

ANT
ANT COIL
CD
NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor.
METAL. OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- **SEMICONDUCTORS**
In each case, $u:\mu$, for example:
 $uA \dots \mu A$ $uPA \dots \mu PA$
 $uPB \dots \mu PB$ $uPC \dots \mu PC$ $uPD \dots \mu PD$
- **CAPACITORS**
 $uF: \mu F$
- **COILS**
 $uH: \mu H$

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-652-894-11	ANT BOARD	*****		
< CAPACITOR >					
C97	1-162-306-11	CERAMIC	0.01uF	30%	16V
< CONNECTOR >					
* CN7	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CN8	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
< DIODE >					
D21	8-719-911-19	DIODE	1SS119		
D22	8-719-911-19	DIODE	1SS119		
< TERMINAL >					
TB1	1-537-489-21	TERMINAL BOARD (ANTENNA)			

*	1-654-076-11	ANT COIL BOARD	*****		
< CAPACITOR >					
C64	1-162-280-31	CERAMIC	82PF	10%	50V
< CONNECTOR >					
* CN9	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CN10	1-695-808-11	CONNECTOR, PC BOARD 8P			
* CN11	1-695-808-11	CONNECTOR, PC BOARD 8P			
< COIL >					
L18	1-414-142-11	INDUCTOR	1uH		
L19	1-410-336-11	INDUCTOR	220uH		
L20	1-409-936-11	COIL, MW RF			
L21	1-409-937-11	COIL, LW RF			
< RESISTOR >					
R63	1-249-416-11	CARBON	820	5%	1/4W

Ref. No.	Part No.	Description			Remark
*	A-3269-662-A	CD BOARD, COMPLETE (AEP)			
*	A-3269-666-A	CD BOARD, COMPLETE (UK)	*****		
< CAPACITOR >					
C700	1-136-165-00	FILM	0.1uF	5%	50V
C701	1-130-475-00	MYLAR	0.0022uF	5%	50V
C702-704					
	1-136-165-00	FILM	0.1uF	5%	50V
C705	1-131-375-00	TANTALUM	4.7uF	10%	10V
C706	1-136-159-00	FILM	0.033uF	5%	50V
C707					
C707	1-136-156-00	FILM	0.018uF	5%	50V
C708	1-162-217-31	CERAMIC	56PF	5%	50V
C709	1-126-962-11	ELECT	3.3uF	20%	50V
C710	1-136-495-11	FILM	0.068uF	5%	50V
C711	1-162-215-31	CERAMIC	47PF	5%	50V
C712					
C712	1-162-294-31	CERAMIC	0.001uF	10%	50V
C713	1-136-159-00	FILM	0.033uF	5%	50V
C714	1-136-153-00	FILM	0.01uF	5%	50V
C715	1-136-159-00	FILM	0.033uF	5%	50V
C716	1-136-153-00	FILM	0.01uF	5%	50V
C717					
C717	1-124-589-11	ELECT	47uF	20%	16V
C718	1-126-157-11	ELECT	10uF	20%	16V
C721	1-136-161-00	FILM	0.047uF	5%	50V
C722	1-136-157-00	FILM	0.022uF	5%	50V
C723	1-136-165-00	FILM	0.1uF	5%	50V
C724					
C724	1-124-584-00	ELECT	100uF	20%	10V
C725	1-162-198-31	CERAMIC	8.2PF	10%	50V
C726	1-162-294-31	CERAMIC	0.001uF	10%	50V
C727	1-136-165-00	FILM	0.1uF	5%	50V
C728	1-164-159-11	CERAMIC	0.1uF		50V
C729					
C729	1-124-126-00	ELECT	47uF	20%	10V
C730	1-126-176-11	ELECT	220uF	20%	10V
C731	1-162-294-31	CERAMIC	0.001uF	10%	50V
C732	1-136-154-00	FILM	0.012uF	5%	50V
C733	1-162-294-31	CERAMIC	0.001uF	10%	50V

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark			
C734	1-130-472-00	MYLAR	0.0012uF	5%	50V	C787	1-126-176-11	ELECT	220uF	20%	10V
C735	1-162-215-31	CERAMIC	47PF	5%	50V	C788	1-136-165-00	FILM	0.1uF	5%	50V
C736	1-124-443-00	ELECT	100uF	20%	10V	C790	1-124-465-00	ELECT	0.47uF	20%	50V
C737	1-162-294-31	CERAMIC	0.001uF	10%	50V	C791	1-164-159-11	CERAMIC	0.1uF		50V
C738	1-136-165-00	FILM	0.1uF	5%	50V	C792	1-124-907-11	ELECT	10uF	20%	50V
C739	1-161-494-00	CERAMIC	0.022uF		25V	C793	1-164-159-11	CERAMIC	0.1uF		50V
C740	1-136-165-00	FILM	0.1uF	5%	50V	C795	1-162-306-11	CERAMIC	0.01uF	30%	16V
C741	1-124-589-11	ELECT	47uF	20%	16V	C796	1-162-306-11	CERAMIC	0.01uF	30%	16V
C742	1-136-161-00	FILM	0.047uF	5%	50V	C798	1-124-584-00	ELECT	100uF	20%	10V
C743	1-130-473-00	MYLAR	0.0015uF	5%	50V	< CONNECTOR >					
C744	1-162-286-31	CERAMIC	220PF	10%	50V	* CN701	1-564-710-11	PIN, CONNECTOR (SMALL TYPE)	8P		
C745	1-136-169-00	FILM	0.22uF	5%	50V	* CN702	1-564-710-11	PIN, CONNECTOR (SMALL TYPE)	8P		
C746	1-136-153-00	FILM	0.01uF	5%	50V	CN703	1-564-722-11	PIN, CONNECTOR (SMALL TYPE)	6P		
C747	1-130-481-00	MYLAR	0.0068uF	5%	50V	* CN704	1-750-422-11	CONNECTOR, FFC/FPC	17P		
C748	1-162-294-31	CERAMIC	0.001uF	10%	50V	CN705	1-750-414-11	CONNECTOR, FFC/FPC	9P		
C749	1-162-306-11	CERAMIC	0.01uF	30%	16V	CN706	1-564-721-11	PIN, CONNECTOR (SMALL TYPE)	5P		
C750	1-126-176-11	ELECT	220uF	20%	10V	< DIODE >					
C752	1-162-206-31	CERAMIC	20PF	5%	50V	D701	8-719-911-19	DIODE	ISS119		
C753	1-162-206-31	CERAMIC	20PF	5%	50V	< IC >					
C754	1-164-159-11	CERAMIC	0.1uF		50V	IC701	8-752-068-52	IC	CXA1782BQ		
C755	1-136-173-00	FILM	0.47uF	5%	50V	IC702	8-752-361-92	IC	CXD2517Q		
C756	1-162-306-11	CERAMIC	0.01uF	30%	16V	IC703	8-759-250-33	IC	KA9258D-T2		
C757	1-164-159-11	CERAMIC	0.1uF		50V	IC704	8-759-196-57	IC	SM5874AM-ET		
C758	1-162-294-31	CERAMIC	0.001uF	10%	50V	IC705	8-759-711-82	IC	NJM4580E		
C759	1-162-199-31	CERAMIC	10PF	5%	50V	IC706	8-759-040-83	IC	BA6287F		
C760	1-162-288-31	CERAMIC	330PF	10%	50V	J1001	8-749-921-12	IC	GP1F32T (OPTICAL DIGITAL OUT)		
C765	1-164-159-11	CERAMIC	0.1uF		50V	< COIL >					
C766	1-164-159-11	CERAMIC	0.1uF		50V	L741	1-408-405-00	INDUCTOR	4.7uH		
C767	1-126-176-11	ELECT	220uF	20%	10V	L743-745	1-408-405-00	INDUCTOR	4.7uH		
C768	1-136-165-00	FILM	0.1uF	5%	50V	L746	1-414-187-11	INDUCTOR	47uH		
C769	1-162-294-31	CERAMIC	0.001uF	10%	50V	L747	1-414-187-11	INDUCTOR	47uH		
C770	1-162-288-31	CERAMIC	330PF	10%	50V	L760	1-410-509-11	INDUCTOR	10uH		
C771	1-162-217-31	CERAMIC	56PF	5%	50V	L770	1-410-509-11	INDUCTOR	10uH		
C772	1-162-217-31	CERAMIC	56PF	5%	50V	< TRANSISTOR >					
C773	1-130-478-00	MYLAR	0.0039uF	5%	50V	Q701	8-729-801-84	TRANSISTOR	2SB1013-4		
C774	1-126-163-11	ELECT	4.7uF	20%	50V	Q702	8-729-900-89	TRANSISTOR	DTC144ES		
C775	1-162-191-31	CERAMIC	2.2PF	10%	50V	Q703	8-729-900-74	TRANSISTOR	DTC143TS		
C776	1-124-126-00	ELECT	47uF	20%	10V	Q704	8-729-266-83	TRANSISTOR	2SC2668-Y		
C777-779	1-162-219-31	CERAMIC	68PF	5%	50V	Q705	8-729-902-80	TRANSISTOR	DTA114YS		
C780	1-124-126-00	ELECT	47uF	20%	10V	Q760	8-729-900-74	TRANSISTOR	DTC143TS		
C781-784	1-126-160-11	ELECT	1uF	20%	50V	Q770	8-729-900-74	TRANSISTOR	DTC143TS		
C785	1-126-176-11	ELECT	220uF	20%	10V						
C786	1-162-306-11	CERAMIC	0.01uF	30%	16V						

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark	
< RESISTOR >								
R700	1-249-429-11	CARBON	10K 5% 1/4W	R760	1-249-429-11	CARBON	10K 5% 1/4W	
R701	1-247-887-00	CARBON	220K 5% 1/4W	R761	1-249-429-11	CARBON	10K 5% 1/4W	
R702	1-247-896-11	CARBON	510K 5% 1/4W	R762	1-247-870-11	CARBON	43K 5% 1/4W	
R703	1-249-441-11	CARBON	100K 5% 1/4W	R763	1-247-870-11	CARBON	43K 5% 1/4W	
R704	1-249-441-11	CARBON	100K 5% 1/4W	R764	1-249-434-11	CARBON	27K 5% 1/4W	
R705	1-249-437-11	CARBON	47K 5% 1/4W	R765	1-249-434-11	CARBON	27K 5% 1/4W	
R706	1-249-441-11	CARBON	100K 5% 1/4W	R766	1-249-414-11	CARBON	560 5% 1/4W	
R707	1-249-432-11	CARBON	18K 5% 1/4W	R767	1-249-423-11	CARBON	3.3K 5% 1/4W	
R708	1-247-891-00	CARBON	330K 5% 1/4W	R768	1-249-431-11	CARBON	15K 5% 1/4W	
R709	1-247-862-11	CARBON	20K 5% 1/4W	R769	1-249-417-11	CARBON	1K 5% 1/4W	
R710	1-249-393-11	CARBON	10 5% 1/4W	R770	1-249-429-11	CARBON	10K 5% 1/4W	
R711	1-249-417-11	CARBON	1K 5% 1/4W	R771	1-249-429-11	CARBON	10K 5% 1/4W	
R713	1-249-433-11	CARBON	22K 5% 1/4W	R772	1-247-870-11	CARBON	43K 5% 1/4W	
R714	1-247-883-00	CARBON	150K 5% 1/4W	R773	1-247-870-11	CARBON	43K 5% 1/4W	
R715	1-247-806-11	CARBON	91 5% 1/4W	R774	1-249-434-11	CARBON	27K 5% 1/4W	
R716	1-249-429-11	CARBON	10K 5% 1/4W	R775	1-249-434-11	CARBON	27K 5% 1/4W	
R717	1-249-434-11	CARBON	27K 5% 1/4W	R776	1-249-414-11	CARBON	560 5% 1/4W	
R718	1-247-899-11	CARBON	680K 5% 1/4W	R777	1-249-423-11	CARBON	3.3K 5% 1/4W	
R719	1-249-417-11	CARBON	1K 5% 1/4W	R778	1-249-417-11	CARBON	1K 5% 1/4W	
R720	1-249-441-11	CARBON	100K 5% 1/4W	R779	1-249-417-11	CARBON	1K 5% 1/4W	
R721	1-247-895-00	CARBON	470K 5% 1/4W	R781	1-249-417-11	CARBON	1K 5% 1/4W	
R722-729	1-249-417-11	CARBON	1K 5% 1/4W	R782	1-249-417-11	CARBON	1K 5% 1/4W	
	1-249-435-11	CARBON	33K 5% 1/4W	R783	1-249-429-11	CARBON	10K 5% 1/4W	
R730	1-249-433-11	CARBON	22K 5% 1/4W	R784	1-249-417-11	CARBON	1K 5% 1/4W	
R732	1-249-429-11	CARBON	10K 5% 1/4W	R785	1-249-429-11	CARBON	10K 5% 1/4W	
R733	1-249-435-11	CARBON	33K 5% 1/4W	R786	1-249-417-11	CARBON	1K 5% 1/4W	
R734	1-249-437-11	CARBON	47K 5% 1/4W	R789	1-249-431-11	CARBON	15K 5% 1/4W	
R736	1-249-430-11	CARBON	12K 5% 1/4W	R790	1-249-433-11	CARBON	22K 5% 1/4W	
R737	1-249-430-11	CARBON	12K 5% 1/4W	R791	1-249-417-11	CARBON	1K 5% 1/4W	
R738	1-249-429-11	CARBON	10K 5% 1/4W	R793	1-249-425-11	CARBON	4.7K 5% 1/4W	
R739	1-249-417-11	CARBON	1K 5% 1/4W	R794	1-249-425-11	CARBON	4.7K 5% 1/4W	
R740	1-247-881-00	CARBON	120K 5% 1/4W	R795	1-249-441-11	CARBON	100K 5% 1/4W	
R741	1-249-423-11	CARBON	3.3K 5% 1/4W	R796	1-249-441-11	CARBON	100K 5% 1/4W	
R742	1-249-429-11	CARBON	10K 5% 1/4W	R798	1-249-393-11	CARBON	10 5% 1/4W	
R743	1-247-903-00	CARBON	1M 5% 1/4W	R799	1-249-417-11	CARBON	1K 5% 1/4W	
< VARIABLE RESISTOR >								
R744	1-247-887-00	CARBON	220K 5% 1/4W	RV701	1-230-497-11	RES, ADJ, CARBON	22K	
R745	1-247-856-00	CARBON	11K 5% 1/4W	RV702	1-230-497-11	RES, ADJ, CARBON	22K	
R746	1-249-417-11	CARBON	1K 5% 1/4W	RV703	1-241-765-11	RES, ADJ, CARBON	22K	
R747	1-249-437-11	CARBON	47K 5% 1/4W	RV704	1-238-019-11	RES, ADJ, CARBON	47K	
< VIBRATOR >								
R751-753	1-249-429-11	CARBON	10K 5% 1/4W	X701	1-567-908-11	VIBRATOR, CRYSTAL	(16.9344MHz)	
R754	1-249-417-11	CARBON	1K 5% 1/4W	*****				
R755	1-249-409-11	CARBON	220 5% 1/4W	*****				
R756-758	1-249-417-11	CARBON	1K 5% 1/4W	*****				

EQ **LAMP** **LCD** **LOADING** **MAIN**

Ref. No.	Part No.	Description			Remark		Ref. No.	Part No.	Description			Remark		
*	A-3276-611-A	EQ BOARD, COMPLETE			*****				< DIODE >					
		< CAPACITOR >						D406	8-719-911-19	DIODE	1SS119			
C1101	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V					< IC >				
C1201	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V			IC401	8-759-153-90	IC	uPD7225GB-3B7			
		< DIODE >							< COIL >					
D1301	8-719-404-46	DIODE	MA110				L401	1-410-509-11	INDUCTOR		10uH			
		< TRANSISTOR >							< LIQUID CRYSTAL DISPLAY >					
Q1101	8-729-012-83	TRANSISTOR	2SK679A				LCD401	1-810-513-11	DISPLAY PANEL, LIQUID CRYSTAL					
Q1201	8-729-012-83	TRANSISTOR	2SK679A						< RESISTOR >					
Q1301	8-729-901-05	TRANSISTOR	DTA124EK					R401	1-247-881-00	CARBON		120K 5%	1/4W	
		< RESISTOR >						R402	1-249-441-11	CARBON		100K 5%	1/4W	
R1101	1-216-049-00	METAL CHIP	1K	5%	1/10W			R403	1-249-441-11	CARBON		100K 5%	1/4W	
R1201	1-216-049-00	METAL CHIP	1K	5%	1/10W			R405	1-247-891-00	CARBON		330K 5%	1/4W	
		*****						R406	1-249-429-11	CARBON		10K 5%	1/4W	
*	1-652-892-11	LAMP BOARD						R408-411	1-249-417-11	CARBON		1K 5%	1/4W	
		*****						R418	1-249-429-11	CARBON		10K 5%	1/4W	
	7-685-647-79	SCREW, TAPPING +BV	3X10						*****					
		< CONNECTOR >						*	1-640-523-11	LOADING BOARD				
		*****							< CONNECTOR >					
*	CN403	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P					CN707	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P				
		< PILOT LAMP >							< SWITCH >					
PL401-404		1-518-688-11	LAMP, PILOT					S702	1-692-667-11	SWITCH, LEAF (OPEN/CLOSE)				
*	1-652-891-11	LCD BOARD						S703	1-692-667-11	SWITCH, LEAF (LOAD IN/OUT)				
		*****							*****					
	3-914-151-01	HOLDER (LCD)						*	A-3269-667-A	MAIN BOARD, COMPLETE (AEP)				
	3-914-152-01	ILLUMINATOR						*	A-3269-669-A	MAIN BOARD, COMPLETE (UK)				
		< CAPACITOR >							*****					
C401	1-124-589-11	ELECT	47uF	20%	16V				7-685-647-79 SCREW, TAPPING +BV 3X10					
C402	1-126-163-11	ELECT	4.7uF	20%	50V				< CAPACITOR >					
C403	1-164-159-11	CERAMIC	0.1uF		50V			C514	1-124-916-11	ELECT		22uF 20%	63V	
C404	1-164-159-11	CERAMIC	0.1uF		50V			C515	1-125-507-11	DOUBLE LAYERS		0.22F 10%	5.5V	
C406	1-162-306-11	CERAMIC	0.01uF	30%	16V			C529	1-162-294-31	CERAMIC		0.001uF 10%	50V	
C407	1-162-306-11	CERAMIC	0.01uF	30%	16V			C531-538	1-162-294-31	CERAMIC		0.001uF 10%	50V	
		< CONNECTOR >						C541	1-162-294-31	CERAMIC		0.001uF 10%	50V	
CN406	1-766-248-11	CONNECTOR, BOARD TO BOARD	6P					C542	1-162-286-31	CERAMIC		220PF 10%	50V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C543-545						C673	1-124-907-11	ELECT	10uF	20%	50V
	1-162-294-31	CERAMIC	0.001uF	10%	50V	C674	1-124-907-11	ELECT	10uF	20%	50V
C550	1-162-294-31	CERAMIC	0.001uF	10%	50V	C675	1-162-306-11	CERAMIC	0.01uF	30%	16V
C552	1-164-159-11	CERAMIC	0.1uF		50V	C676	1-124-910-11	ELECT	47uF	20%	50V
C553-555						C677	1-162-306-11	CERAMIC	0.01uF	30%	16V
	1-162-294-31	CERAMIC	0.001uF	10%	50V	C678	1-126-101-11	ELECT	100uF	20%	16V
C601	1-124-126-00	ELECT	47uF	20%	10V	C679	1-124-907-11	ELECT	10uF	20%	50V
C602-604						C680	1-124-925-11	ELECT	2.2uF	20%	100V
	1-124-907-11	ELECT	10uF	20%	50V	C681	1-162-306-11	CERAMIC	0.01uF	30%	16V
C605	1-124-903-11	ELECT	1uF	20%	50V	C682	1-124-907-11	ELECT	10uF	20%	50V
C606	1-124-903-11	ELECT	1uF	20%	50V	C683	1-124-443-00	ELECT	100uF	20%	10V
C607	1-124-463-00	ELECT	0.1uF	20%	50V	C684	1-162-306-11	CERAMIC	0.01uF	30%	16V
C608	1-124-907-11	ELECT	10uF	20%	50V	C688	1-102-959-00	CERAMIC	22PF	5%	50V
C609	1-124-907-11	ELECT	10uF	20%	50V	C689	1-102-959-00	CERAMIC	22PF	5%	50V
C610	1-124-903-11	ELECT	1uF	20%	50V	C690	1-162-294-31	CERAMIC	0.001uF	10%	50V
C611	1-124-927-11	ELECT	4.7uF	20%	100V	C691	1-102-965-00	CERAMIC	39PF	5%	50V
C612	1-124-604-00	ELECT	330uF	20%	10V	C692	1-102-965-00	CERAMIC	39PF	5%	50V
C613	1-124-907-11	ELECT	10uF	20%	50V	C693	1-102-966-00	CERAMIC	43PF	5%	50V
C614	1-126-101-11	ELECT	100uF	20%	16V	C694	1-102-966-00	CERAMIC	43PF	5%	50V
C615	1-124-910-11	ELECT	47uF	20%	50V	C695	1-162-306-11	CERAMIC	0.01uF	30%	16V
C616	1-128-131-11	ELECT	22uF	20%	50V	C697	1-124-771-00	ELECT	6800uF	20%	25V
C617	1-162-306-11	CERAMIC	0.01uF	30%	16V	C698	1-124-564-11	ELECT	4700uF	20%	25V
C618	1-124-122-11	ELECT	100uF	20%	50V	C801	1-124-907-11	ELECT	10uF	20%	50V
C619	1-124-927-11	ELECT	4.7uF	20%	100V	C802	1-124-907-11	ELECT	10uF	20%	50V
C620	1-162-306-11	CERAMIC	0.01uF	30%	16V	C803	1-124-927-11	ELECT	4.7uF	20%	100V
C621	1-124-902-00	ELECT	0.47uF	20%	50V	C804	1-124-927-11	ELECT	4.7uF	20%	100V
C622	1-162-306-11	CERAMIC	0.01uF	30%	16V	C805	1-130-494-11	MYLAR	0.082uF	5%	50V
C623	1-124-126-00	ELECT	47uF	20%	10V	C806	1-130-494-11	MYLAR	0.082uF	5%	50V
C624	1-124-126-00	ELECT	47uF	20%	10V	C807	1-162-282-31	CERAMIC	100PF	10%	50V
C625	1-124-927-11	ELECT	4.7uF	20%	100V	C808	1-162-282-31	CERAMIC	100PF	10%	50V
C626	1-124-927-11	ELECT	4.7uF	20%	100V	C809	1-162-215-31	CERAMIC	47PF	5%	50V
C627	1-162-288-31	CERAMIC	330PF	10%	50V	C810	1-162-215-31	CERAMIC	47PF	5%	50V
C628	1-164-159-11	CERAMIC	0.1uF		50V	C811-814					
C629	1-124-126-00	ELECT	47uF	20%	10V		1-130-495-00	MYLAR	0.1uF	5%	50V
C630	1-126-163-11	ELECT	4.7uF	20%	50V	C815	1-130-476-00	MYLAR	0.0027uF	5%	50V
C631	1-126-163-11	ELECT	4.7uF	20%	50V	C816	1-130-476-00	MYLAR	0.0027uF	5%	50V
C640	1-136-165-00	FILM	0.1uF	5%	50V	C817	1-136-169-00	FILM	0.22uF	5%	50V
C651	1-124-126-00	ELECT	47uF	20%	10V	C818	1-136-169-00	FILM	0.22uF	5%	50V
C652	1-162-306-11	CERAMIC	0.01uF	30%	16V	C819	1-130-495-00	MYLAR	0.1uF	5%	50V
C655	1-162-282-31	CERAMIC	100PF	10%	50V	C820	1-130-495-00	MYLAR	0.1uF	5%	50V
C656	1-124-907-11	ELECT	10uF	20%	50V	C821	1-124-925-11	ELECT	2.2uF	20%	100V
C661	1-124-927-11	ELECT	4.7uF	20%	100V	C822	1-124-925-11	ELECT	2.2uF	20%	100V
C664	1-124-443-00	ELECT	100uF	20%	10V	C823	1-130-475-00	MYLAR	0.0022uF	5%	50V
C665	1-124-443-00	ELECT	100uF	20%	10V	C824	1-130-475-00	MYLAR	0.0022uF	5%	50V
C666-668	1-124-126-00	ELECT	47uF	20%	10V	C825	1-126-101-11	ELECT	100uF	20%	16V
	1-124-126-00	ELECT	47uF	20%	10V	C826	1-126-101-11	ELECT	100uF	20%	16V
C669	1-162-306-11	CERAMIC	0.01uF	30%	16V	C827	1-124-927-11	ELECT	4.7uF	20%	100V
C670	1-124-472-11	ELECT	470uF	20%	10V	C828	1-124-927-11	ELECT	4.7uF	20%	100V
C671	1-124-126-00	ELECT	47uF	20%	10V						

MAIN

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark	
C829-832	1-126-101-11	ELECT	100uF	20%	16V	D607	8-719-911-19	DIODE	1SS119
C833-836	1-124-927-11	ELECT	4.7uF	20%	100V	D608	8-719-109-97	DIODE	RD6.8ES-B2
C837	1-136-165-00	FILM	0.1uF	5%	50V	D610	8-719-911-19	DIODE	1SS119
C838	1-136-165-00	FILM	0.1uF	5%	50V	D611	8-719-921-88	DIODE	MTZJ-13B
C839-844	1-124-927-11	ELECT	4.7uF	20%	100V	D612	8-719-911-19	DIODE	1SS119
C845	1-130-495-00	MYLAR	0.1uF	5%	50V	D613	8-719-911-19	DIODE	1SS119
C846	1-130-495-00	MYLAR	0.1uF	5%	50V	D614	8-719-911-19	DIODE	1SS119
C851-854	1-130-494-11	MYLAR	0.082uF	5%	50V	D615	8-719-911-19	DIODE	1SS119
C855	1-124-903-11	ELECT	1uF	20%	50V	D616	8-719-911-19	DIODE	1SS119
C856	1-124-903-11	ELECT	1uF	20%	50V	D625	8-719-924-32	DIODE	MTZJ-T-77-24D
C857	1-124-790-11	ELECT	0.47uF	20%	100V	D626	8-719-911-19	DIODE	1SS119
C858	1-124-790-11	ELECT	0.47uF	20%	100V	D627	8-719-911-19	DIODE	1SS119
C859	1-162-282-31	CERAMIC	100PF	10%	50V	D801	8-719-911-19	DIODE	1SS119
C860	1-162-282-31	CERAMIC	100PF	10%	50V	D802	8-719-911-19	DIODE	1SS119
C861	1-130-495-00	MYLAR	0.1uF	5%	50V	FL801	1-239-503-11	FILTER, LOW PASS	
C862	1-130-495-00	MYLAR	0.1uF	5%	50V	FL802	1-239-503-11	FILTER, LOW PASS	
C869	1-136-169-00	FILM	0.22uF	5%	50V				< LPF >
C870	1-136-169-00	FILM	0.22uF	5%	50V	IC601	8-759-000-48	IC	MC14052BCP
C871	1-124-916-11	ELECT	22uF	20%	63V	IC602	8-759-140-53	IC	uPD4053BC
C872	1-124-916-11	ELECT	22uF	20%	63V	IC603	8-759-711-35	IC	NJM4580D
C873	1-124-126-00	ELECT	47uF	20%	10V	IC604	8-752-057-50	IC	CXA1642P
C874	1-124-126-00	ELECT	47uF	20%	10V	IC605	8-759-711-35	IC	NJM4580D
C875	1-136-169-00	FILM	0.22uF	5%	50V	IC606	8-759-000-48	IC	MC14052BCP
C876	1-136-169-00	FILM	0.22uF	5%	50V	IC607	8-759-711-35	IC	NJM4580D
C877	1-162-302-11	CERAMIC	0.0022uF	30%	16V	IC608	8-759-264-31	IC	TDA7315
C878	1-162-302-11	CERAMIC	0.0022uF	30%	16V	IC609	8-759-711-35	IC	NJM4580D
C885	1-162-282-31	CERAMIC	100PF	10%	50V	IC614	8-759-711-35	IC	NJM4580D
C886	1-162-282-31	CERAMIC	100PF	10%	50V	IC615	8-759-822-51	IC	LA4620
< CONNECTOR >									
* CN601	1-563-586-11	CONNECTOR, FLEXIBLE 9P				IC617	8-759-080-77	IC	BA3933
CN602	1-568-826-11	CONNECTOR, FFC/FPC 7P				IC618	8-759-173-39	IC	NJU7201L50-T3
* CN604	1-750-422-11	CONNECTOR, FFC/FPC 17P				IC619	8-759-173-39	IC	NJU7201L50-T3
CN605	1-563-591-11	CONNECTOR, FLEXIBLE 14P				IC621	8-759-196-15	IC	S-80735AL-Z
* CN607	1-750-422-11	CONNECTOR, FFC/FPC 17P				IC622	8-752-859-74	IC	CXP84124-016Q
< DIODE >									
D601	8-719-911-19	DIODE	1SS119			< JACK >			
D602	8-719-911-19	DIODE	1SS119			J601	1-764-593-21	JACK 2P (LINE IN)	
D603	8-719-911-19	DIODE	1SS119			J602	1-568-267-21	JACK (MIX MIC)	
D604	8-719-911-19	DIODE	1SS119			J603	1-537-240-31	TERMINAL BOARD (CHECKER PIN) (SPEAKERS)	
D605	8-719-911-19	DIODE	1SS119			J604	1-568-267-11	JACK (HEADPHONES)	
< COIL >									
L605	1-410-521-11	INDUCTOR				L605	1-410-521-11	INDUCTOR	100uH
L606	1-410-521-11	INDUCTOR				L606	1-410-521-11	INDUCTOR	100uH

Ref. No.	Part No.	Description	Remark
< IC LINK >			
△PS601	1-532-685-00	LINK, IC ICP-N20 (0.8A)	
< TRANSISTOR >			
Q616	8-729-905-50	TRANSISTOR DTC343TS	
Q617	8-729-900-63	TRANSISTOR DTA124ES	
Q618	8-729-900-63	TRANSISTOR DTA124ES	
Q619	8-729-900-63	TRANSISTOR DTA124ES	
Q621	8-729-266-83	TRANSISTOR 2SC2668-Y	
Q622	8-729-266-83	TRANSISTOR 2SC2668-Y	
Q624	8-729-422-73	TRANSISTOR UN4212	
Q625	8-729-422-73	TRANSISTOR UN4212	
Q626	8-729-422-73	TRANSISTOR UN4212	
Q627	8-729-900-63	TRANSISTOR DTA124ES	
Q628	8-729-900-63	TRANSISTOR DTA124ES	
Q629	8-729-422-73	TRANSISTOR UN4212	
Q631	8-729-900-63	TRANSISTOR DTA124ES	
Q632	8-729-422-73	TRANSISTOR UN4212	
Q633	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q634	8-729-422-73	TRANSISTOR UN4212	
Q635	8-729-900-63	TRANSISTOR DTA124ES	
Q636	8-729-018-99	TRANSISTOR 2SD2394-F	
Q643	8-729-422-73	TRANSISTOR UN4212	
Q803	8-729-422-73	TRANSISTOR UN4212	
Q804	8-729-422-73	TRANSISTOR UN4212	
Q805	8-729-422-73	TRANSISTOR UN4212	
Q806	8-729-422-73	TRANSISTOR UN4212	
Q807	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q808	8-729-119-78	TRANSISTOR 2SC2785-HFE	
< RESISTOR >			
R500	1-249-409-11	CARBON 220 5% 1/4W	
R501	1-249-409-11	CARBON 220 5% 1/4W	
R503-506	1-249-417-11	CARBON 1K 5% 1/4W	
R510-518	1-249-417-11	CARBON 1K 5% 1/4W	
R519-521	1-249-429-11	CARBON 10K 5% 1/4W	
R522	1-247-807-11	CARBON 100 5% 1/4W	
R523	1-249-437-11	CARBON 47K 5% 1/4W	
R525-528	1-249-417-11	CARBON 1K 5% 1/4W	
R529	1-249-410-11	CARBON 270 5% 1/4W	
R531	1-249-410-11	CARBON 270 5% 1/4W	
R532	1-249-409-11	CARBON 220 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R534	1-249-429-11	CARBON 10K 5% 1/4W	
R535-537	1-249-417-11	CARBON 1K 5% 1/4W	
R538-540	1-247-807-11	CARBON 100 5% 1/4W	
R541	1-249-425-11	CARBON 4.7K 5% 1/4W	
R542	1-249-425-11	CARBON 4.7K 5% 1/4W	
R543	1-249-417-11	CARBON 1K 5% 1/4W	
R544	1-249-429-11	CARBON 10K 5% 1/4W	
R545	1-249-429-11	CARBON 10K 5% 1/4W	
R546	1-249-421-11	CARBON 2.2K 5% 1/4W	
R547	1-249-421-11	CARBON 2.2K 5% 1/4W	
R548-561	1-249-417-11	CARBON 1K 5% 1/4W	
R563	1-249-425-11	CARBON 4.7K 5% 1/4W	
R564	1-249-425-11	CARBON 4.7K 5% 1/4W	
R566	1-249-421-11	CARBON 2.2K 5% 1/4W	
R567	1-249-417-11	CARBON 1K 5% 1/4W	
R569	1-249-418-11	CARBON 1.2K 5% 1/4W	
R572	1-249-417-11	CARBON 1K 5% 1/4W	
R575	1-249-433-11	CARBON 22K 5% 1/4W	
R577-579	1-249-425-11	CARBON 4.7K 5% 1/4W	
R580	1-249-419-11	CARBON 1.5K 5% 1/4W	
R581	1-249-429-11	CARBON 10K 5% 1/4W	
R582	1-249-429-11	CARBON 10K 5% 1/4W	
R588	1-249-417-11	CARBON 1K 5% 1/4W	
R591	1-249-426-11	CARBON 5.6K 5% 1/4W	
R593-595	1-249-429-11	CARBON 10K 5% 1/4W	
R596	1-249-437-11	CARBON 47K 5% 1/4W	
R597	1-249-441-11	CARBON 100K 5% 1/4W	
R602	1-247-807-11	CARBON 100 5% 1/4W	
R603	1-247-807-11	CARBON 100 5% 1/4W	
R605	1-247-807-11	CARBON 100 5% 1/4W	
R606	1-249-437-11	CARBON 47K 5% 1/4W	
R607	1-247-807-11	CARBON 100 5% 1/4W	
R608	1-249-425-11	CARBON 4.7K 5% 1/4W	
R609	1-249-425-11	CARBON 4.7K 5% 1/4W	
R610	1-249-429-11	CARBON 10K 5% 1/4W	
R611	1-249-437-11	CARBON 47K 5% 1/4W	
R612	1-249-425-11	CARBON 4.7K 5% 1/4W	
R613	1-249-425-11	CARBON 4.7K 5% 1/4W	
R614	1-249-441-11	CARBON 100K 5% 1/4W	
R615	1-247-807-11	CARBON 100 5% 1/4W	
△R616	1-212-865-00	FUSIBLE 22 5% 1/4W F	
R617	1-249-425-11	CARBON 4.7K 5% 1/4W	
R618	1-249-425-11	CARBON 4.7K 5% 1/4W	
R619	1-249-437-11	CARBON 47K 5% 1/4W	
R620	1-249-437-11	CARBON 47K 5% 1/4W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R621	1-249-433-11	CARBON	22K 5% 1/4W	R831-836	1-249-433-11	CARBON	22K 5% 1/4W
R622	1-249-423-11	CARBON	3.3K 5% 1/4W	R837	1-249-425-11	CARBON	4.7K 5% 1/4W
R623	1-249-429-11	CARBON	10K 5% 1/4W	R838	1-249-425-11	CARBON	4.7K 5% 1/4W
R624	1-249-425-11	CARBON	4.7K 5% 1/4W	R841	1-249-429-11	CARBON	10K 5% 1/4W
R625-627				R842	1-249-429-11	CARBON	10K 5% 1/4W
	1-249-437-11	CARBON	47K 5% 1/4W				
R628	1-247-807-11	CARBON	100 5% 1/4W	R843	1-249-433-11	CARBON	22K 5% 1/4W
R629	1-249-413-11	CARBON	470 5% 1/4W	R844	1-249-433-11	CARBON	22K 5% 1/4W
R630	1-249-441-11	CARBON	100K 5% 1/4W	R845-848			
R631	1-247-895-00	CARBON	470K 5% 1/4W		1-249-422-11	CARBON	2.7K 5% 1/4W
R632	1-249-437-11	CARBON	47K 5% 1/4W	R851	1-249-426-11	CARBON	5.6K 5% 1/4W
R633	1-249-425-11	CARBON	4.7K 5% 1/4W	R852	1-249-426-11	CARBON	5.6K 5% 1/4W
R634	1-249-437-11	CARBON	47K 5% 1/4W	R853	1-249-425-11	CARBON	4.7K 5% 1/4W
R635	1-249-421-11	CARBON	2.2K 5% 1/4W	R854	1-249-425-11	CARBON	4.7K 5% 1/4W
R658	1-249-429-11	CARBON	10K 5% 1/4W	R855	1-247-881-00	CARBON	120K 5% 1/4W
R670	1-247-807-11	CARBON	100 5% 1/4W	R856	1-247-881-00	CARBON	120K 5% 1/4W
R687	1-249-409-11	CARBON	220 5% 1/4W	R857	1-247-893-11	CARBON	390K 5% 1/4W
R688	1-249-429-11	CARBON	10K 5% 1/4W	R858	1-247-893-11	CARBON	390K 5% 1/4W
R692	1-247-903-00	CARBON	1M 5% 1/4W	R859	1-249-437-11	CARBON	47K 5% 1/4W
R694	1-247-807-11	CARBON	100 5% 1/4W	R860	1-249-437-11	CARBON	47K 5% 1/4W
R697	1-249-426-11	CARBON	5.6K 5% 1/4W	R861	1-249-417-11	CARBON	1K 5% 1/4W
R698	1-249-426-11	CARBON	5.6K 5% 1/4W	R862	1-249-417-11	CARBON	1K 5% 1/4W
R801	1-249-437-11	CARBON	47K 5% 1/4W	R865	1-249-429-11	CARBON	10K 5% 1/4W
R802	1-249-437-11	CARBON	47K 5% 1/4W	R866	1-249-429-11	CARBON	10K 5% 1/4W
R803	1-249-417-11	CARBON	1K 5% 1/4W	R869	1-249-441-11	CARBON	100K 5% 1/4W
R804	1-249-417-11	CARBON	1K 5% 1/4W	R870	1-249-441-11	CARBON	100K 5% 1/4W
R805	1-249-433-11	CARBON	22K 5% 1/4W	R871	1-249-420-11	CARBON	1.8K 5% 1/4W
R806	1-249-433-11	CARBON	22K 5% 1/4W	R872	1-249-420-11	CARBON	1.8K 5% 1/4W
R807	1-249-437-11	CARBON	47K 5% 1/4W	R875	1-247-903-00	CARBON	1M 5% 1/4W
R808	1-249-437-11	CARBON	47K 5% 1/4W	R876	1-247-903-00	CARBON	1M 5% 1/4W
R809	1-249-417-11	CARBON	1K 5% 1/4W	R877	1-247-889-00	CARBON	270K 5% 1/4W
R810	1-249-417-11	CARBON	1K 5% 1/4W	R878	1-247-889-00	CARBON	270K 5% 1/4W
R811	1-249-438-11	CARBON	56K 5% 1/4W	R879	1-247-881-00	CARBON	120K 5% 1/4W
R812	1-249-438-11	CARBON	56K 5% 1/4W	R880	1-247-881-00	CARBON	120K 5% 1/4W
R813	1-249-441-11	CARBON	100K 5% 1/4W	R881	1-249-435-11	CARBON	33K 5% 1/4W
R814	1-249-441-11	CARBON	100K 5% 1/4W	R882	1-249-435-11	CARBON	33K 5% 1/4W
R815	1-249-426-11	CARBON	5.6K 5% 1/4W	R883	1-249-429-11	CARBON	10K 5% 1/4W
R816	1-249-426-11	CARBON	5.6K 5% 1/4W	R884	1-249-429-11	CARBON	10K 5% 1/4W
R817	1-247-887-00	CARBON	220K 5% 1/4W	R885	1-249-424-11	CARBON	3.9K 5% 1/4W
R818	1-247-887-00	CARBON	220K 5% 1/4W	R886	1-249-424-11	CARBON	3.9K 5% 1/4W
R819	1-249-417-11	CARBON	1K 5% 1/4W	R887	1-249-417-11	CARBON	1K 5% 1/4W
R820	1-249-417-11	CARBON	1K 5% 1/4W	R888	1-249-417-11	CARBON	1K 5% 1/4W
R821	1-249-425-11	CARBON	4.7K 5% 1/4W	R889	1-249-421-11	CARBON	2.2K 5% 1/4W
R822	1-249-425-11	CARBON	4.7K 5% 1/4W	R890	1-249-421-11	CARBON	2.2K 5% 1/4W
R823	1-249-429-11	CARBON	10K 5% 1/4W	R895-898			
R824	1-249-429-11	CARBON	10K 5% 1/4W		1-249-381-11	CARBON	1 5% 1/4W
R827	1-249-429-11	CARBON	10K 5% 1/4W	R905	1-247-811-00	CARBON	150 5% 1/4W
R829	1-247-895-00	CARBON	470K 5% 1/4W	R906	1-247-811-00	CARBON	150 5% 1/4W
R830	1-247-895-00	CARBON	470K 5% 1/4W	R909	1-249-441-11	CARBON	100K 5% 1/4W

MAIN **MOTOR** **POWER** **RELAY**

Ref. No.	Part No.	Description	Remark					
R910	1-249-441-11	CARBON	100K	5%	1/4W			
R919	1-249-417-11	CARBON	1K	5%	1/4W			
R920	1-249-417-11	CARBON	1K	5%	1/4W			
R921	1-249-428-11	CARBON	8.2K	5%	1/4W			
R922	1-249-428-11	CARBON	8.2K	5%	1/4W			
R995	1-249-425-11	CARBON	4.7K	5%	1/4W			
R996	1-249-425-11	CARBON	4.7K	5%	1/4W			
< VARIABLE RESISTOR >								
RV601	1-223-672-11	RES. VAR. CARBON 10K (MIC LEVEL)	< VIBRATOR >					
X602	1-760-105-11	VIBRATOR, CRYSTAL (32.768kHz)						
X603	1-579-901-11	OSCILLATOR, CERAMIC (4.1944MHz)						

*	1-636-789-13	MOTOR BOARD	*****					
< CONNECTOR >								
CN708	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P	< SWITCH >					
S701	1-572-085-11	SWITCH, LEAF (LIMIT)	*****					

*	1-652-897-11	POWER BOARD	*****					
1-533-233-11 HOLDER, FUSE								
< CAPACITOR >								
C501	1-124-910-11	ELECT	47uF	20%	50V			
C502-504	1-164-159-11	CERAMIC	0.1uF		50V			
C505-512	1-101-005-00	CERAMIC	22000PF		50V			
< CONNECTOR >								
CN501	1-564-321-00	PIN, CONNECTOR 2P	*****					
*	CN502	1-569-977-11	PIN, CONNECTOR (PC BOARD) 6P	< DIODE >				

D609	8-719-200-82	DIODE	11ES2					
D617	8-719-200-82	DIODE	11ES2					
D618	8-719-500-33	DIODE	D3SB20					
D619	8-719-200-82	DIODE	11ES2					
D620	8-719-200-82	DIODE	11ES2					
D621	8-719-200-82	DIODE	11ES2					

Ref. No.	Part No.	Description	Remark				
			< FUSE >				
	▲F501	1-532-237-00	FUSE (3.15A)				
	▲F502	1-532-506-51	FUSE (6.3A) (UK)				
	▲F502	1-532-246-11	FUSE (6.3A) (AEP)				
< LINE FILTER >							
	▲LF501	1-424-150-11	TRANSFORMER, LINE FILTER				
< RESISTOR >							
R584	1-249-433-11	CARBON	22K	5%	1/4W		
R585	1-249-433-11	CARBON	22K	5%	1/4W		
R586	1-249-437-11	CARBON	47K	5%	1/4W		
▲R587	1-219-112-11	FUSIBLE	10	5%	1/4W F		

*	1-641-566-11	RELAY BOARD	*****				
*	3-380-110-01	HOLDER, PHOTO	< CONNECTOR >				
*	CN691	1-695-374-31	PIN, CONNECTOR (PC BOARD) 13P	< DIODE >			
*	CN692	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P				
< PHOTO INTERRUPTER >							
PH691	8-719-939-11	PHOTO INTERRUPTER	GP-2S09-B				
< SWITCH >							
S691	1-572-248-11	SWITCH, LEAF (HALF)	*****				
S692	1-572-248-11	SWITCH, LEAF (TYPE II Cr02)					
S693	1-572-248-11	SWITCH, LEAF (TYPE IV METAL)					
S694	1-572-248-11	SWITCH, LEAF (ERASE PROOF) (SIDE A)					
S695	1-572-248-11	SWITCH, LEAF (ERASE PROOF) (SIDE B)					
S696	1-692-163-11	SWITCH, MICRO (STOP)	*****				

The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark								
*	A-3269-674-A	SW BOARD, COMPLETE (AEP)				R435	1-249-416-11	CARBON	820	5%	1/4W						
*	A-3269-676-A	SW BOARD, COMPLETE (UK)				R436	1-249-418-11	CARBON	1.2K	5%	1/4W						

		< CAPACITOR >				R437	1-249-420-11	CARBON	1.8K	5%	1/4W						
C408	1-162-306-11	CERAMIC	0.01uF	30%	16V	R438	1-249-423-11	CARBON	3.3K	5%	1/4W						
C409	1-126-157-11	ELECT	10uF	20%	16V	R439	1-249-427-11	CARBON	6.8K	5%	1/4W						
C410-412						R440	1-249-432-11	CARBON	18K	5%	1/4W						
	1-162-294-31	CERAMIC	0.001uF	10%	50V	< SWITCH >											
C413	1-161-494-00	CERAMIC	0.022uF		25V	S401	1-692-444-11	SWITCH, KEY BOARD (TAPE ■)									
C414	1-161-494-00	CERAMIC	0.022uF		25V	S402	1-692-444-11	SWITCH, KEY BOARD (TAPE ▷)									
C415-417						S403	1-692-444-11	SWITCH, KEY BOARD (TAPE ◁)									
	1-162-294-31	CERAMIC	0.001uF	10%	50V	S404	1-692-444-11	SWITCH, KEY BOARD (RADIO)									
	< CONNECTOR >																
* CN401	1-568-320-11	PLUG, CONNECTOR 8P				S406	1-692-444-11	SWITCH, KEY BOARD (LINE)									
* CN402	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				S407	1-692-444-11	SWITCH, KEY BOARD (DBB)									
* CN404	1-568-322-11	PLUG, CONNECTOR 10P				S408	1-692-444-11	SWITCH, KEY BOARD (SOUND)									
CN405	1-766-247-11	CONNECTOR, BOARD TO BOARD 6P				S409	1-692-444-11	SWITCH, KEY BOARD (POWER)									
	< DIODE >																
D401	8-719-048-87	LED	SLR-332MGF03	(KARAOKE)		S410	1-692-444-11	SWITCH, KEY BOARD (TUNING +)									
D403	8-719-048-88	LED	SLR-342MGF29	(SOUND)		S411	1-692-444-11	SWITCH, KEY BOARD (TUNING -)									
D404	8-719-048-88	LED	SLR-342MGF29	(DBB)		S412	1-692-444-11	SWITCH, KEY BOARD (●/■)									
D405	8-719-987-04	LED	SLR-34VRF39	(POWER)		S413	1-692-444-11	SWITCH, KEY BOARD (HIGH SPEED DUBBING)									
	< IC >																
IC402	8-749-923-11	IC	GP1U58XB			S414	1-692-444-11	SWITCH, KEY BOARD (►)									
	< RESISTOR >																
R407	1-247-807-31	CARBON	100	5%	1/4W	S415	1-692-444-11	SWITCH, KEY BOARD (◀)									
R415	1-249-410-11	CARBON	270	5%	1/4W	S416	1-692-444-11	SWITCH, KEY BOARD (KARAOKE)									
R416	1-249-417-11	CARBON	1K	5%	1/4W	S417	1-692-444-11	SWITCH, KEY BOARD (CD □)									
R417	1-249-411-11	CARBON	330	5%	1/4W	S418	1-692-444-11	SWITCH, KEY BOARD (CD ▷□)									
R420	1-249-415-11	CARBON	680	5%	1/4W	S419	1-692-444-11	SWITCH, KEY BOARD (VOLUME -)									
R421	1-249-416-11	CARBON	820	5%	1/4W	S420	1-692-444-11	SWITCH, KEY BOARD (VOLUME +)									
R422	1-249-418-11	CARBON	1.2K	5%	1/4W	S421	1-692-444-11	SWITCH, KEY BOARD (OPEN/CLOSE △)									
R423	1-249-420-11	CARBON	1.8K	5%	1/4W	S422	1-692-444-11	SWITCH, KEY BOARD (PRESET AMS/SEARCH ▲)									
R424	1-249-423-11	CARBON	3.3K	5%	1/4W	S423	1-692-444-11	SWITCH, KEY BOARD (PRESET AMS/SEARCH ▷)									
R425	1-249-427-11	CARBON	6.8K	5%	1/4W	*****											
R426	1-249-432-11	CARBON	18K	5%	1/4W	* A-3269-686-A	TC BOARD, COMPLETE (AEP)										
R427	1-249-415-11	CARBON	680	5%	1/4W	* A-3269-688-A	TC BOARD, COMPLETE (UK)										
R428	1-249-416-11	CARBON	820	5%	1/4W	*****											
R429	1-249-418-11	CARBON	1.2K	5%	1/4W												
R430	1-249-420-11	CARBON	1.8K	5%	1/4W												
R431	1-249-423-11	CARBON	3.3K	5%	1/4W												
R432	1-249-427-11	CARBON	6.8K	5%	1/4W												
R433	1-249-432-11	CARBON	18K	5%	1/4W												
R434	1-249-415-11	CARBON	680	5%	1/4W												
	< CAPACITOR >																
						C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V						
						C102	1-124-126-00	ELECT	47uF	20%	10V						
						C103	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V						
						C104	1-124-927-11	ELECT	4.7uF	20%	100V						
						C105	1-124-903-11	ELECT	1uF	20%	50V						
						C106	1-124-126-00	ELECT	47uF	20%	10V						
						C107	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V						
						C108	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V						
						C109	1-124-907-11	ELECT	10uF	20%	50V						

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark			
C110	1-124-902-00	ELECT	0.47uF	20%	50V	C316	1-124-443-00	ELECT	100uF	20%	10V	
C111	1-124-927-11	ELECT	4.7uF	20%	100V	C317	1-137-575-11	FILM	0.001uF	5%	100V	
C112	1-124-927-11	ELECT	4.7uF	20%	100V	C318	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C113	1-216-295-00	METAL CHIP	0 5%	1/10W		C319	1-137-574-11	FILM	470PF	5%	100V	
C114	1-124-927-11	ELECT	4.7uF	20%	100V	C320	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C115	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	C321	1-137-576-11	FILM	0.0082uF	5%	100V	
C116	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	C322	1-124-126-00	ELECT	47uF	20%	10V	
C117	1-130-495-00	MYLAR	0.1uF	5%	50V	C323	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C118	1-124-927-11	ELECT	4.7uF	20%	100V	C324	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C119	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	C325	1-124-126-00	ELECT	47uF	20%	10V	
C120	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	C326	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C121	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	C328	1-126-176-11	ELECT	220uF	20%	10V	
C122	1-124-927-11	ELECT	4.7uF	20%	100V	C330	1-124-903-11	ELECT	1uF	20%	50V	
C201	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	C331	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C202	1-124-126-00	ELECT	47uF	20%	10V	C332	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C203	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V	C334	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C204	1-124-927-11	ELECT	4.7uF	20%	100V	C335	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C205	1-124-903-11	ELECT	1uF	20%	50V	C338	1-124-907-11	ELECT	10uF	20%	50V	
C206	1-124-126-00	ELECT	47uF	20%	10V	C339	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C207	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C340	1-124-903-11	ELECT	1uF	20%	50V	
C208	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	C341	1-126-176-11	ELECT	220uF	20%	10V	
C209	1-124-907-11	ELECT	10uF	20%	50V	C342	1-126-233-11	ELECT	22uF	20%	50V	
C210	1-124-902-00	ELECT	0.47uF	20%	50V	C343	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C211	1-124-927-11	ELECT	4.7uF	20%	100V	C344	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C212	1-124-927-11	ELECT	4.7uF	20%	100V	C345	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C213	1-216-295-00	METAL CHIP	0 5%	1/10W		< CONNECTOR >						
C214	1-124-927-11	ELECT	4.7uF	20%	100V	* CN301 1-750-746-11 CONNECTOR, FFC/FPC 14P * CN302 1-695-017-11 HOUSING, CONNECTOR 7P CN305 1-750-739-11 CONNECTOR, FFC/FPC 7P CN306 1-750-745-11 CONNECTOR, FFC/FPC 13P	< DIODE >					
C215	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V		< IC >					
C216	1-163-119-00	CERAMIC CHIP	120PF	5%	50V		D301 8-719-404-46 DIODE MA110					
C217	1-130-495-00	MYLAR	0.1uF	5%	50V		< IC >					
C218	1-124-927-11	ELECT	4.7uF	20%	100V		IC301 8-759-249-21 IC uPC1330AGR IC302 8-759-265-81 IC BA3442KS IC303 8-752-070-25 IC CXA1552M-T4 IC304 8-759-267-27 IC BU2092F					
C219	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	< JUMPER RESISTOR >						
C220	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	JR301 1-216-295-00 METAL CHIP 0 5% 1/10W JR302 1-216-295-00 METAL CHIP 0 5% 1/10W	< COIL >					
C221	1-163-001-11	CERAMIC CHIP	220PF	10%	50V		C311 1-126-233-11 ELECT 22uF 20% 50V C313 1-164-232-11 CERAMIC CHIP 0.01uF 50V C314 1-124-903-11 ELECT 1uF 20% 50V C315 1-124-239-00 ELECT 6.9uF 20% 10V					
C222	1-124-927-11	ELECT	4.7uF	20%	100V		L103 1-410-776-11 INDUCTOR 12mH L203 1-410-776-11 INDUCTOR 12mH L301 1-408-426-00 INDUCTOR 270uH					

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L302	1-410-993-11	INDUCTOR CHIP	1uH	R109	1-216-073-00	METAL CHIP	10K 5% 1/10W
			< IC LINK >	R110	1-216-097-00	METAL CHIP	100K 5% 1/10W
△PS301	1-532-685-00	LINK, IC ICP-N20	(0.8A)	R111	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
			< TRANSISTOR >	R113	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
Q301	8-729-105-37	TRANSISTOR	2SC3360-N16	R114	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q302	8-729-105-37	TRANSISTOR	2SC3360-N16	R201	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q303	8-729-800-34	TRANSISTOR	2SC3070	R202	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q304	8-729-101-07	TRANSISTOR	2SB798-DL	R203	1-216-029-00	METAL CHIP	150 5% 1/10W
Q305	8-729-424-12	TRANSISTOR	UN2112	R204	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
Q306	8-729-902-99	TRANSISTOR	DTC114TK	R205	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q307	8-729-424-59	TRANSISTOR	UN2212	R206	1-216-075-00	METAL CHIP	12K 5% 1/10W
Q309	8-729-920-21	TRANSISTOR	DTC314TKH04	R207	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q310	8-729-920-21	TRANSISTOR	DTC314TKH04	R208	1-216-075-00	METAL CHIP	12K 5% 1/10W
Q311	8-729-901-46	TRANSISTOR	DTA114YK	R209	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q312	8-729-424-59	TRANSISTOR	UN2212	R210	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q313	8-729-424-59	TRANSISTOR	UN2212	R211	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
Q314	8-729-901-46	TRANSISTOR	DTA114YK	R213	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
Q315	8-729-920-21	TRANSISTOR	DTC314TKH04	R214	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q316	8-729-920-21	TRANSISTOR	DTC314TKH04	R301	1-216-025-00	METAL CHIP	100 5% 1/10W
Q317	8-729-901-46	TRANSISTOR	DTA114YK	R302	1-216-085-00	METAL CHIP	33K 5% 1/10W
Q318	8-729-901-46	TRANSISTOR	DTA114YK	R303	1-216-083-00	METAL CHIP	27K 5% 1/10W
Q320	8-729-901-46	TRANSISTOR	DTA114YK	R304	1-216-085-00	METAL CHIP	33K 5% 1/10W
Q321	8-729-920-31	TRANSISTOR	DTC343TK	R305	1-216-097-00	METAL CHIP	100K 5% 1/10W
Q322	8-729-900-52	TRANSISTOR	DTC114TK	R306	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q323	8-729-901-46	TRANSISTOR	DTA114YK	R307	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q324	8-729-900-52	TRANSISTOR	UN2212	R309	1-216-025-00	METAL CHIP	100 5% 1/10W
Q325	8-729-801-84	TRANSISTOR	2SB1013-4	R310	1-216-150-00	METAL GLAZE	10 5% 1/8W
Q326	8-729-902-99	TRANSISTOR	DTC114TK	R311	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
Q327	8-729-424-59	TRANSISTOR	UN2212	R312	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
Q328	8-729-424-59	TRANSISTOR	UN2212	R313	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q329	8-729-902-99	TRANSISTOR	DTC114TK	R314	1-216-079-00	METAL CHIP	18K 5% 1/10W
Q330	8-729-424-12	TRANSISTOR	UN2112	R315	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q343	8-729-424-59	TRANSISTOR	UN2212	R320	1-216-079-00	METAL CHIP	18K 5% 1/10W
Q344	8-729-424-59	TRANSISTOR	UN2212	R321	1-216-079-00	METAL CHIP	18K 5% 1/10W
Q604	8-729-900-52	TRANSISTOR	DTA114YK	R322	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q605	8-729-202-56	TRANSISTOR	2SA950-Y	R323	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
			< RESISTOR >	R324	1-216-017-00	METAL CHIP	47 5% 1/10W
R101	1-216-049-00	METAL CHIP	1K 5% 1/10W	R325	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R102	1-216-049-00	METAL CHIP	1K 5% 1/10W	R329	1-216-134-00	METAL CHIP	2.2 5% 1/8W
R103	1-216-029-00	METAL CHIP	150 5% 1/10W	R330	1-216-146-00	METAL GLAZE	6.8 5% 1/8W
R104	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	R331	1-216-081-00	METAL CHIP	22K 5% 1/10W
R105	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R332	1-216-077-00	METAL CHIP	15K 5% 1/10W
R106	1-216-075-00	METAL CHIP	12K 5% 1/10W	R333	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R107	1-216-073-00	METAL CHIP	10K 5% 1/10W	R334	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R108	1-216-075-00	METAL CHIP	12K 5% 1/10W	R341	1-216-073-00	METAL CHIP	10K 5% 1/10W
				R350	1-216-105-00	METAL CHIP	220K 5% 1/10W
				R351	1-216-089-00	METAL CHIP	47K 5% 1/10W
				R354	1-216-097-00	METAL CHIP	100K 5% 1/10W
				R356	1-216-079-00	METAL CHIP	18K 5% 1/10W

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R358	1-216-081-00	METAL CHIP	22K	5%	1/10W	*	A-3269-703-A	TUNER BOARD, COMPLETE (AEP)			
R359	1-216-049-00	METAL CHIP	1K	5%	1/10W	*	A-3269-704-A	TUNER BOARD, COMPLETE (UK)			
R360	1-216-081-00	METAL CHIP	22K	5%	1/10W			*****			
R362	1-216-079-00	METAL CHIP	18K	5%	1/10W						
R367	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R368	1-216-089-00	METAL CHIP	47K	5%	1/10W	C1	1-163-031-11	CERAMIC CHIP	0.01uF		50V
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W	C2	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
R370	1-216-089-00	METAL CHIP	47K	5%	1/10W	C3	1-163-031-11	CERAMIC CHIP	0.01uF		50V
R373	1-216-041-00	METAL CHIP	470	5%	1/10W	C4	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
R374	1-216-089-00	METAL CHIP	47K	5%	1/10W	C5	1-163-088-00	CERAMIC CHIP	5PF		50V
R375	1-216-089-00	METAL CHIP	47K	5%	1/10W	C6	1-163-038-00	CERAMIC CHIP	0.1uF		25V
R376	1-216-049-00	METAL CHIP	1K	5%	1/10W	C7	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
R377	1-216-041-00	METAL CHIP	470	5%	1/10W	C8	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
R378	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	C9	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
R379	1-216-097-00	METAL CHIP	100K	5%	1/10W	C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
R380	1-216-049-00	METAL CHIP	1K	5%	1/10W	C11	1-163-031-11	CERAMIC CHIP	0.01uF		50V
R382	1-216-097-00	METAL CHIP	100K	5%	1/10W	C12	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
R383	1-216-097-00	METAL CHIP	100K	5%	1/10W	C13	1-163-031-11	CERAMIC CHIP	0.01uF		50V
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W	C14	1-124-907-11	ELECT	10uF	20%	50V
R385	1-216-049-00	METAL CHIP	1K	5%	1/10W	C15	1-124-927-11	ELECT	4.7uF	20%	100V
R386	1-216-097-00	METAL CHIP	100K	5%	1/10W	C16	1-124-903-11	ELECT	1uF	20%	50V
R387	1-216-037-00	METAL CHIP	330	5%	1/10W	C17	1-124-927-11	ELECT	4.7uF	20%	100V
R390-392						C18	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
	1-216-073-00	METAL CHIP	10K	5%	1/10W	C19	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
R393	1-216-097-00	METAL CHIP	100K	5%	1/10W	C20	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
R394	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	C21	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
R395-397						C22	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
	1-216-073-00	METAL CHIP	10K	5%	1/10W	C23	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
R398	1-216-049-00	METAL CHIP	1K	5%	1/10W	C24	1-124-902-00	ELECT	0.47uF	20%	50V
R399	1-216-097-00	METAL CHIP	100K	5%	1/10W	C25	1-163-034-00	CERAMIC CHIP	0.033uF		50V
< VARIABLE RESISTOR >						C26	1-163-031-11	CERAMIC CHIP	0.01uF		50V
RV101	1-241-630-11	RES, ADJ, CARBON 10K				C27	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
RV102	1-241-765-11	RES, ADJ, CARBON 22K				C28	1-124-907-11	ELECT	10uF	20%	50V
RV103	1-238-019-11	RES, ADJ, CARBON 47K				C29	1-163-118-00	CERAMIC CHIP	110PF	5%	50V
RV201	1-241-630-11	RES, ADJ, CARBON 10K				C30	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
RV202	1-241-765-11	RES, ADJ, CARBON 22K				C31	1-163-031-11	CERAMIC CHIP	0.01uF		50V
RV203	1-238-019-11	RES, ADJ, CARBON 47K				C32	1-164-232-11	CERAMIC CHIP	0.01uF		50V
RV303	1-241-763-11	RES, ADJ, CARBON 4.7K				C33	1-130-483-00	MYLAR	0.01uF	5%	50V
RV304	1-241-763-11	RES, ADJ, CARBON 4.7K				C34	1-163-031-11	CERAMIC CHIP	0.01uF		50V
< TRANSFORMER >						C35	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
T301	1-433-391-11	TRANSFORMER, BIAS OSCILLATOR				C36	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
*****						C37	1-163-134-00	CERAMIC CHIP	510PF	5%	50V
						C38	1-163-035-00	CERAMIC CHIP	0.047uF		50V
						C39	1-163-031-11	CERAMIC CHIP	0.01uF		50V
						C40	1-124-907-11	ELECT	10uF	20%	50V
C41-44											
							1-163-117-00	CERAMIC CHIP	100PF	5%	50V
							1-163-099-00	CERAMIC CHIP	18PF	5%	50V
							1-163-099-00	CERAMIC CHIP	18PF	5%	50V

TUNER

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C47	1-136-177-00	FILM	1uF	5%	50V				< IC >		
C48	1-130-483-00	MYLAR	0.01uF	5%	50V	IC1	8-759-039-95	IC TA8176SN			
C49	1-124-443-00	ELECT	100uF	20%	10V	IC2	8-759-082-01	IC TA2007AN			
C51	1-124-902-00	ELECT	0.47uF	20%	50V	IC3	8-759-823-81	IC LC7216M			
C52	1-124-902-00	ELECT	0.47uF	20%	50V				< COIL >		
C53	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	L1	1-402-738-11	COIL (RF)			
C54	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	L2	1-406-484-21	COIL (OSC)			
C55-57						L4	1-406-483-11	COIL (OSC)			
	1-163-033-00	CERAMIC CHIP	0.022uF		50V	L5	1-410-977-11	INDUCTOR	100uH		
C59	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	L6-9	1-410-971-11	INDUCTOR	10uH		
C61	1-124-443-00	ELECT	100uF	20%	10V				< TRANSISTOR >		
C62	1-163-033-00	CERAMIC CHIP	0.022uF		50V	Q1	8-729-920-38	TRANSISTOR	2SC2059K-N		
C63	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	Q2	8-729-119-32	TRANSISTOR	2SK193-E		
						Q3	8-729-900-52	TRANSISTOR	DTC114YK		
CF1	1-579-185-21	FILTER, CERAMIC				Q4	8-729-900-52	TRANSISTOR	DTC114YK		
CF2	1-579-185-21	FILTER, CERAMIC				Q5	8-729-900-52	TRANSISTOR	DTC114YK		
CF3	1-579-764-11	DISCRIMINATOR, CERAMIC				Q6	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
CF4	1-579-762-21	VIBRATOR, CERAMIC				Q7	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
						Q8	8-729-920-38	TRANSISTOR	2SC2059K-N		
CFT1	1-239-173-11	ENCAPSULATED COMPONENT				Q9	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
						Q10	8-729-923-73	TRANSISTOR	DTA123YK		
* CN1	1-563-594-11	CONNECTOR, FLEXIBLE 17P				Q11	8-729-012-83	TRANSISTOR	2SK679A		
* CN4	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				Q12	8-729-106-07	TRANSISTOR	2SK514-H		
* CN12	1-766-825-11	PIN, CONNECTOR (PC BOARD) 4P				Q13	8-729-424-28	TRANSISTOR	UN2116		
* CN13	1-766-825-11	PIN, CONNECTOR (PC BOARD) 4P				Q14	8-729-900-52	TRANSISTOR	DTC114YK		
						Q17	8-729-900-52	TRANSISTOR	DTC114YK		
						Q18	8-729-601-58	TRANSISTOR	2SC3053-C		
CT1	1-141-411-11	CAP, ADJ 20PF				Q19	8-729-900-52	TRANSISTOR	DTC114YK		
CT2	1-141-411-11	CAP, ADJ 20PF				Q20	8-729-923-73	TRANSISTOR	DTA123YK		
CT3	1-141-410-11	CAP, ADJ 10PF				Q21	8-729-902-99	TRANSISTOR	DTC114TK		
CT4	1-141-439-21	CAP, ADJ 40PF				Q22	8-729-902-99	TRANSISTOR	DTC114TK		
CT5	1-141-410-11	CAP, ADJ 10PF				Q23	8-729-144-85	TRANSISTOR	2SK1133		
						Q24	8-729-900-52	TRANSISTOR	DTC114YK		
						Q25	8-729-900-52	TRANSISTOR	DTC114YK		
D1	8-719-801-78	DIODE	1SS184						< RESISTOR >		
D2	8-713-300-57	DIODE	1T33			R1	1-216-025-00	METAL CHIP	100	5%	1/10W
D3	8-713-300-57	DIODE	1T33			R2	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
D4	8-719-980-71	DIODE	SVC342L-V			R3	1-216-013-00	METAL CHIP	33	5%	1/10W
D5	8-719-026-23	DIODE	MA786			R4	1-216-089-00	METAL CHIP	47K	5%	1/10W
D6	8-719-104-34	DIODE	1S2836			R5	1-216-077-00	METAL CHIP	15K	5%	1/10W
						R6	1-216-077-00	METAL CHIP	15K	5%	1/10W
FL1	1-236-711-21	FILTER, BAND PASS				R7	1-216-089-00	METAL CHIP	47K	5%	1/10W
						R8	1-216-037-00	METAL CHIP	330	5%	1/10W
						R9	1-216-027-00	METAL CHIP	120	5%	1/10W
						R10	1-216-015-00	METAL CHIP	39	5%	1/10W

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R11	1-216-049-00	METAL CHIP	1K	5%	1/10W			< TRANSFORMER >			
R12	1-216-089-00	METAL CHIP	47K	5%	1/10W	T1	1-416-015-21	TRANSFORMER, IF			
R13	1-216-063-00	METAL CHIP	3.9K	5%	1/10W			< VIBRATOR >			
R14	1-216-073-00	METAL CHIP	10K	5%	1/10W	X1	1-579-574-21	VIBRATOR, CRYSTAL (7.2MHz)			
R15	1-216-057-00	METAL CHIP	2.2K	5%	1/10W			*****			
R16	1-216-068-00	METAL CHIP	6.2K	5%	1/10W			MISCELLANEOUS			
R17	1-216-073-00	METAL CHIP	10K	5%	1/10W			*****			
R18	1-216-029-00	METAL CHIP	150	5%	1/10W						
R19	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R20	1-216-089-00	METAL CHIP	47K	5%	1/10W						
R21	1-216-090-00	METAL CHIP	51K	5%	1/10W	▲9	1-575-651-11	CORD, POWER (AEP)			
R22	1-216-085-00	METAL CHIP	33K	5%	1/10W	▲14	1-696-570-21	CORD, POWER (UK)			
R23	1-216-081-00	METAL CHIP	22K	5%	1/10W	72	1-765-436-11	WIRE, PARALLEL (FFC) (14 CORE)			
R24	1-216-073-00	METAL CHIP	10K	5%	1/10W	73	1-765-437-11	WIRE, PARALLEL (FFC) (7 CORE)			
R25	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	74	1-765-435-11	WIRE, PARALLEL (FFC) (13 CORE)			
R26	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	75	1-765-640-11	WIRE, PARALLEL (FFC) (17 CORE)			
R27	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	76	1-765-434-11	WIRE, PARALLEL (FFC) (17 CORE)			
R28	1-216-049-00	METAL CHIP	1K	5%	1/10W	* 77	1-766-695-11	WIRE, PARALLEL (FFC) (9 CORE)			
R29	1-216-049-00	METAL CHIP	1K	5%	1/10W	104	1-452-493-21	MAGNET			
R30	1-216-073-00	METAL CHIP	10K	5%	1/10W	▲127	8-848-127-11	PICK-UP, OPTICAL KSS-210A			
R31	1-216-105-00	METAL CHIP	220K	5%	1/10W	251	1-765-399-11	CORD (SPEAKER)			
R32	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	▲F501	1-532-237-00	FUSE (3.15A)			
R33	1-216-073-00	METAL CHIP	10K	5%	1/10W	▲F502	1-532-506-51	FUSE (6.3A) (UK)			
R34	1-216-049-00	METAL CHIP	1K	5%	1/10W	▲F502	1-576-264-11	FUSE (6.3A) (AEP)			
R35	1-216-089-00	METAL CHIP	47K	5%	1/10W	HRPE301	1-543-991-11	HEAD, MAGNETIC (REC/PB/ERASE)			
R36-38						M691	A-3263-138-A	MOTOR ASSY (REEL/CAPSTAN)			
	1-216-073-00	METAL CHIP	10K	5%	1/10W	M701	X-2625-132-1	GEAR ASSY, MOTOR (SLED)			
R39	1-216-049-00	METAL CHIP	1K	5%	1/10W	M703	X-2625-117-1	MOTOR ASSY, LOADING			
R40	1-216-089-00	METAL CHIP	47K	5%	1/10W	PM691	1-454-595-11	SOLENOID, PLUNGER			
R41	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	SP901	1-504-611-11	SPEAKER (10CM) (L-CH)			
R42	1-216-073-00	METAL CHIP	10K	5%	1/10W	SP902	1-504-611-11	SPEAKER (10CM) (R-CH)			
R43	1-216-073-00	METAL CHIP	10K	5%	1/10W	▲T501	1-426-872-11	TRANSFORMER, POWER (AEP)			
R44	1-216-025-00	METAL CHIP	100	5%	1/10W	▲T501	1-426-873-11	TRANSFORMER, POWER (UK)			
R45	1-216-049-00	METAL CHIP	1K	5%	1/10W			*****			
R46	1-216-057-00	METAL CHIP	2.2K	5%	1/10W						
R47	1-216-089-00	METAL CHIP	47K	5%	1/10W						
R48	1-216-027-00	METAL CHIP	120	5%	1/10W						
R49	1-216-033-00	METAL CHIP	220	5%	1/10W						
R50	1-216-025-00	METAL CHIP	100	5%	1/10W						
R51	1-216-065-00	METAL CHIP	4.7K	5%	1/10W						
R52	1-216-081-00	METAL CHIP	22K	5%	1/10W						
R53	1-216-049-00	METAL CHIP	1K	5%	1/10W						
R55	1-216-057-00	METAL CHIP	2.2K	5%	1/10W						
R56-59											
	1-216-295-00	METAL CHIP	0	5%	1/10W						
R60	1-216-101-00	METAL CHIP	150K	5%	1/10W						
R61	1-216-025-00	METAL CHIP	100	5%	1/10W						
R62	1-216-097-00	METAL CHIP	100K	5%	1/10W						
R70	1-216-295-00	METAL CHIP	0	5%	1/10W						

The components identified by mark ▲ or dotted line with mark. ▲ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
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HARDWARE LIST

#1	7-621-255-15	SCREW +P 2X3	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-627-553-97	PRECISION SCREW +P 2X8 TYPE 3	
#4	7-685-659-79	SCREW +BVTP 4X8 TYPE2 IT-3	
#5	7-682-902-21	SCREW +PWH 2.6X6	
#6	7-685-134-19	SCREW +P 2.6X8 TYPE2 SLIT	
#7	7-685-245-19	SCREW +KTP 3X6 TYPE2 NON-SLIT	
#8	7-685-647-79	SCREW, TAPPING +BV 3X10	
#9	7-685-648-79	SCREW, TAPPING +BV 3X12	
#10	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S (UK)	

ACCESSORIES & PACKING MATERIALS

1-467-789-11	COMMANDER, STANDARD (RMT-C301)
1-501-374-11	ANTENNA, LOOP
1-501-594-11	ANTENNA (FM)
3-758-948-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)
3-758-948-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (AEP)
*	3-917-051-01 INDIVIDUAL CARTON
*	3-917-735-01 CUSHION (SP)
*	3-917-736-01 CUSHION (TOP)
*	3-917-737-01 CUSHION (BOTTOM)